5th IAC- KC CON - 2018

2nd & 3rd March 2018
Indian Academy of Cytologists – Karnataka Chapter
(IAC KC con)

SOUVENIR

Department of Pathology
Sri Devaraj Urs Medical College
Constituent College of
Sri Devaraj Urs Academy of Higher Education and Research, Kolar
SRI DEVARAJ URS MEDICAL COLLEGE

A constituent college of Sri Devaraj Urs Academy of Higher Education and Research, Tamaka, Kolar

Presents

“Cytology Update”

5th Indian Academy of Cytologists – Karnataka Chapter Conference (IAC KC Con) 2018

2nd & 3rd March, 2018

Souvenir
Messages
Message

Dear All

Cordial greetings and warm wishes to all.

I am delighted to hear that Sri Devaraj Urs Medical College is hosting the Indian Academy of Cytology – Karnataka Chapter State conference on the 2nd & 3rd of March. They have planned to offer a delightful experience of learning from some of the eminent Cyto-pathologist, a team of handpicked senior teachers who have accepted to come over and share their experience with emerging pathologist and Residents. I am confident and wish the participants a useful two days of interactive learning and enrichment.

It is with delight that I write this message to wish this effort of the Department of Pathology the very best and this effort should be followed by many more efforts to create more opportunities for the residents to learn from some of the best in our profession.

Please do not settle down to live in memories. It will take away your opportunity to perform in the future. Learn to manage your memories to enrich your future performance.

All round development of our students is the responsibility of the institution. Creating opportunities for bringing out talent is an important and critical effort. ‘Ability’ when subjected to systematic training. Becomes ‘proficiency’, There is no other way to be the best. Do your best with dedication and devotion.

God bless all.

Dr. S. Kumar
Chancellor
MESSAGE

I am extremely happy that Sri Devaraj Urs Academy of Higher Education and Research has taken the onus of organizing this year's KC-IAC CON at Kolar. Much as I would like to restrict my message, nostalgic memories keep haunting me when Dr. U.S. Dinesh persistently encouraged all of us to start the Karnataka Chapter of Indian Academy of Cytologists at Dharwad with me as its first President. Somehow he has further insisted that I should continue as its President although there are several more deserving younger members. I am very pleased that these efforts are proving to be very fruitful. Year after year several stalwarts in cytology in our country have graced the conferences with their academic contribution. This year there is no exception. I am sure that with involvement of the seniors, the juniors get inspired and it results in some learning.

I welcome all the delegates from far and wide to Sri Devaraj Urs Academy of Higher Education and Research, the beautiful paradise for learning and mecca of medical education in eastern Karnataka.

May the Conference find its success in Sri Devaraj Urs Medical College.

(Prof. C. V. Raghuveer)
Vice Chancellor
SDUAHER, Tamaka, Kolar
MESSAGE  

24.02.2018

I am pleased to learn that, the 5th Annual State Conference of Indian Academy of Cytologists Karnataka Chapter and Medical Education and Research Trust, Karnataka (IAC - KC CON - 2018) with the theme “Cytology Updates” is being hosted by the Department of Pathology, Sri Devaraj Urs Medical College in collaboration with Indian Academy of Cytologists on 2nd and 3rd March 2018.

I am sure that the conference will provide a platform for pathologists and consultants to present their research work and case reports as well as share their experiences to make the occasion academically rewarding and hope that all participants will be greatly benefitted by this scientific event.

I wish this event a great success and congratulate the organizers for their dedicated efforts.

Dr. A. V. M. Kutty
Registrar
Message

It is a great pleasure to know that Dept. of Pathology, SDUMC is hosting IAC-KC-CON 2018 Indian Academy of Cytologists- Karnataka Chapter Annual State Conference on 2nd & 3rd March 2018 on “Cytology Update”.

The knowledge gained through scientific interaction in a CME, Conference or a Seminar is immense compared to that gained through text books, journals and other learning resources.

A conference provides opportunity for both senior & junior pathologists to show their research experience and also to propose new ideas so that they could be included in the curriculum.
A conference is also a platform to develop collaborative links.

I welcome all the delegates and guests to this 2 days scientific programme and wish the conference grand success.

Regards,

Dr. Harendra Kumar.M.L.
Dean & Principal
Sri Devaraj Urs Medical College,
Tamaka, Kolar – 563 103.
Message

I am happy to know that, Dept., of Pathology, SDUMC is conducting IAC-KC-CON 2018 Indian Academy of Cytologists-Karnataka Chapter Annual State Conference on 2nd & 3rd March 2018 on “Cytology Update”.

This event will be an excellent opportunity for the Pathologists and other professionals, the best possible researchers in the field of Cytopathology from diverse scientific disciplines. The conference is set to witness an exhilarating sessions in scientific programme which will focus on latest innovations to encourage young minds and their research abilities by providing an opportunity to meet the experts in the field of Pathology.

I welcome all the delegate and guests to this scientific programme and wish the conference grand success.

With regards,

(Signature)

Mr. Rajendra J.
Director (Admn. & Finance),
SDUET,
Tamaka, Kolar.
Message

It is very gratifying to note that IAC-KCCON 2018, the Annual Conference of the Indian Academy of Cytologists-Karnataka Chapter, is being held at Sri Devraj Urs Medical College, Kolar, from 2nd to 3rd March 2018 under the stewardship of the First President of the Chapter Dr. Rahugveer C. V. who was instrumental in the birth of the Chapter at its launch at SDM Medical College in Feb 2014. State conferences fulfill the aspiration of large number of cytopathologists who do not have the wherewithal of the luxury of attending National conferences due to various constraints- of time and budgetary restraints. As in any health science the only thing that is constant is the ever present but persistent change that requires regular and frequent updating of ones knowledge as well as soft skills. This can be only done by attendance at such state level Conferences/CMEs/Workshops that will go a long way in improving better quality care to patients. As the National President of the Indian Academy of Cytologists, I deem it my proud privilege to have been closely associated with the Karnataka Chapter of the Indian Academy of Cytologists along with Dr. Rahugveer right from its inception and will look forward to see its growth to a place of eminence amongst the other chapters of the Academy. I take this opportunity to convey my best wishes to the Organizing Committee of IAC-KCCON 2018 for a highly successful conference.

Jai Hind, Jai Karnataka.

Dr Col U S Dinesh, MD, MIAC
President, Indian Academy of Cytologists & Secretary, IAC Karnataka Chapter.
Message

On behalf of organizing committee I welcome you to this cytology conference. We were in the middle of NABL accreditation process, when we were asked to shoulder the responsibility of hosting State Level Cytology Conference (IAC-KC-Con-2018). Initially I was hesitant to take the responsibility, however, the enthusiasm of our staff made me to say ‘yes’ to this endeavour.

Untiring work of teaching and non-teaching staff of our department and unparalleled support from management and administrative bodies of our college and university, we could achieve this feat. With the eminent speakers, I hope this state conference is going to be a great learning experience to all of us. I wish you all the best.

Dr CSBR Prasad
Organising Chairman
IAC KCcon 2018
Professor & HOD, Department of Pathology
Sri Devaraj Urs Medical College, Kolar
Message

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Dr Manjula K

Organising Secretary

IAC KCcon 2018

Associate Professor, Department of Pathology

Sri Devaraj Urs Medical College, Kolar
Organising Team, Department of Pathology, Sri Devaraj Urs Medical, College, Kolar

Sitting Left to Right: DR.MANJULA.K, DR.T.N.SURESH, DR.M.L.HARENDRA KUMAR, DR.C.S.B.R.PRASAD, DR.KALYANI R, DR.SUBHASISH DAS, DR.HEMALATHA A

Standing 1st row: DR.PANDEY SWATI, DR.ARGHA BARUAH, DR.R.YASHASWINI, DR.SUPREETHA MS, DR.GEETHA S, DR.SWAROOP RAJ

Standing 2nd row: DR.MEHDI HAJRA KHURSHEED, DR.CHENNA CHANDANA REDDY, DR.RAJINI T, DR.SULAGNA MANNA, DR.VARSHASREE R, DR.PREETI U, DR.SOUMYA A V

Standing 3rd row: DR.PRADEEP MITRA V, DR.SHAH MANAN BHARATKUMAR.
Gist of the Scientific Session's
Cytopathologic examination of serous effusions is vital for staging, prognostication and management of the patients with gynaecological cancers. Correct identification of malignant cells has significant therapeutic implications. Most patients in our settings, of ovarian cancer are detected with ascitis/peritoneal effusion. In these situations, it is imperative to identify malignant cells and further subtype them. Diagnostic problems arise in differentiating reactive mesothelial cells from adenocarcinoma and mesothelioma, by conventional cell smears(CS). Furthermore, there is a limitation in exact subtyping of adenocarcinoma cells, especially in the clinical scenario of unknown malignancy, wherein the patient presents with malignant ascites, including adenocarcinoma that requires exact subtyping, in view of different, existing chemotherapy options for various adenocarcinomas. The different scenarios include identification of serous carcinomas ovary, mostly high grade; differentiation of serous adenocarcinomas from gastrointestinal adenocarcinomas (who dun-it); mesotheliomas from reactive mesothelial proliferations and adenocarcinomas and in uncovering rare variants, such as clear cell carcinoma.

In these situations, apart from morphologic diagnosis, application of ancillary techniques, including immunocytochemistry, assumes importance. Earlier, computerized morphometric analysis has been performed in diagnosis of effusion specimens. However, this has not met with success in routine clinical practice. Immunocytochemical analysis can be performed on smears, as well as cell blocks. In our department, we routinely prepare cell blocks from effusion specimens. This provides an opportunity to perform several immunocytochemical markers, based on clinco-cytopathological features, in each case. Several immunocytochemical markers available for differentiation of mesothelial cells from adenocarcinoma are: Calretinin, CK5/6, WT1, HBME1. BerEP4, MOC31, CEA, EMA, CK7, PAX8, CK20 etc. Other immunostains useful are Napsin A and CDX2.
This presentation will focus upon clinical challenges and judicious application of immunocytochemical markers for diagnosis and subtyping of adenocarcinomas along with mesotheliomas in gynaecology effusion specimens, especially with personal clinical experience.

Suggested Reading:


Cytology – Gynecological (PAP Smear)

Game plan

1. Objectives
2. Introduction
3. Sampling and preparation methods
4. Pap stain – Basic aspects
5. A. General approach to cytology
   B. Normal cells in a Pap smear
6. The 2014 Bethesda System (TBS)
   a. Specimen type
   b. Specimen adequacy
   c. General categorization (optional)
   d. Interpretation/results
      i. Negative for intraepithelial lesions / malignancy
      ii. Epithelial cell abnormalities
      iii. Others (Endometrial cells in ≥ 45 yrs)
   e. Adjunctive testing
   f. Computer assisted interpretation
   g. Educational notes and suggestion (optional)
7. Quality control in cytology
8. Conclusion
9. References

1. Objectives

At the end of this presentation the participants should be
1. Able to understand the importance of Pap stain
2. Able to know the steps in Pap staining
3. Able to apply the TBS criteria in the interpretation of the Pap smears
4. Able to know the advances made in this field of Gynecological cytology

2. Introduction

George Papanicolaou 1883-1962

Pap stain is a multicolored staining technique, developed by George Papanicolaou, the father of cytopathology. He was born in Greece (1883) and in 1904, received his M.D from University of Athens.

He then served in Greek army. He got his Ph.D. in Zoology, U. of Munich in 1910. In 1913 he moved over to USA and was working as a research biologist at Cornell Medical College, New York. To start with, he was correlating the cytological changes in vaginal discharge of guinea pig in correlation with the ovarian and uterine cycle. He then applied the same theory to humans.
In 1923 he found abnormal cells from women with cervical cancer. No body acknowledged his theory at that time. In 1939, he joined with Dr. Herbert F. Traut, a Gynecologist and worked to prove his idea. In 1943 they both published their findings as “Diagnosis of uterine cancer by the vaginal smear”. The academic and clinical world started believing his work and he became very well known, occupied many positions and finally retired as Director, Papanicolaou cancer institute, Miami in 1961.

On 19th of Feb 1962 he died of Heart attack at age 79. He rose to great heights by his hard work but was very humble and used to tell his admirers “I often feel that whatever I have accomplished has been largely a matter of good luck”. US govt. honored him by releasing a stamp on 18th May 1978.

Till today Pap test is the most simple, painless and cost effective screening tool that has reduced the cervical cancer mortality (Pre pap: 14 per 100,000, Post pap: 4 per 100,000)

3. Sampling and preparation methods

a. Patient instructions
   - Pap smear should be taken 2 weeks after LMP
   - No vaginal medications, douches for 48 hrs before the sampling
   - Intercourse is not recommended for 24 hrs before the sampling

b. Instructions for the sampling person
   - Specimen obtained after insertion of non-lubricated speculum (can be moistened with warm water if necessary)
   - Excess mucus or other discharges should be gently removed
   - Sample obtained before applying acetic acid or Lugol iodine
   - Optimal sample should include ecto and endocervical components

c. Conventional smears
   - Spatula or brush is used. In cases of spatula, a plastic rather than wooden one is recommended as the diagnostic material may get trapped between wooden fibers
   - After proper sampling, smears are made in an area that can be covered nicely by the cover slip
   - Immediate fixation is very critical either in 95% ethanol or spray fixation

d. Liquid based preparation
   - After collecting the material (often brush), it was placed in a liquid fixative (ethanol or methanol based) and transported to lab
   - Smears are made with the use of sophisticated instruments

Advantages of Liquid-Based Technologies

Immediate fixation, better cytology
Lesser obscuring material like blood or mucus
Improved diagnostic yield and specimen adequacy
Decreased rate of atypical smears
Increased rate of dysplastic smears
Availability of material for additional slides
Ancillary testing - HPV, Chlamydia, Gonorrhea....

Disadvantages of Liquid-Based Technologies

Cost (conventional: Rs 150, Liquid based: Rs 900 in India)
Personal to prepare the slides
Disposable accessories
Training
Changes in the criteria
Learning Curve
4. Pap stain—Basic aspects

Nowadays, Pap staining is used to differentiate cells in smear preparations of various bodily secretions; the specimens can be gynecological smears (Pap smears), sputum, brushings, washings, urine, cerebrospinal fluid, abdominal fluid, pleural fluid, synovial fluid, seminal fluid, fine needle aspiration material, tumor touch samples, or other materials containing cells. Pap staining is a very reliable technique. As such, it is used for cervical cancer screening in gynecology. The entire procedure is known as Pap smear.

The classic form of Pap stain involves five dyes in three solutions

1. A nuclear stain, hematoxylin, is used to stain cell nuclei.
2. First OG-6 counterstain (-6 denotes the used concentration of phosphotungstic acid; other variants are OG-5 and OG-8). It stains keratin. Its original role was to stain the small cells of keratinizing squamous cell carcinoma present in sputum.
3. Second EA (Eosin Azure) counterstain, comprising three dyes; the number denotes the proportion of the dyes, e.g. EA-36, EA-50, EA-65.
   • Eosin Y stains the superficial epithelial squamous cells, nucleoli, cilia, and red blood cells. Light Green SF yellow stains the cytoplasm of other cells, including non-keratinized squamous cells. This dye is now quite expensive and difficult to obtain, therefore some manufacturers are switching to Fast Green FCF, however it produces visually different results and is not considered satisfactory by some.
   • Bismarck brown Y stains nothing and in contemporary formulations it is often omitted.

On a well-prepared specimen, the cell nuclei are crisp blue to black. Cells with high content of keratin are yellow, glycogen stains yellow as well. Superficial cells are orange to pink, and intermediate and parabasal cells are turquoise green to blue. Metaplastic cells often stain both green and pink at once.

Pap stain comes in several versions, subtly differing in the exact dyes used, their ratios, and timing of the process. The difference between regressive and progressive staining should be known (a favorite and useful question often asked in the practical examination)
5A. General approach to cytology

a. Quantity:
   a. Number of normal & abnormal cells present plays a vital role in the diagnosis and in the differentiation of borderline lesions like ASC-US and dysplastic lesions like LSIL.
   b. Specimen adequacy should always be kept in mind in negative cases (when there is no epithelial abnormality, if the specimen is inadequate, it has to be repeated)
   c. At the same time, the specimen should be reported as adequate even if a small cluster (1-2 cell) of definitive atypical cells are seen (in other words, in the presence of epithelial abnormality….quantity doesn’t matter……hope it is not confusing…..!!)

b. Quality:
   a. Cell border: Distinct or indistinct
   b. Amount of cytoplasm and its nature: Scant or abundant with mucin
   c. Number of nuclei: Binucleation and multinucleation is common in epithelial lesions
   d. Nuclear cytoplasmic ratio: The most important in cytology.
      i. < 1/3 - Normal or ASC-US, AGC (wide infra)
      ii. 1/3 to 2/3 - Low grade epithelial lesion
      iii. > 2/3 - High grade epithelial lesion
         (This is good in almost all the organs)
   e. The size, shape, Distribution:
      i. Uniform size, shape distribution - Normal
      ii. Variation in size, shape, distribution - Abnormal (ASC-US, LSIL, HSIL)
   f. Nuclear membrane regularity and chromatin content are also very important. The chromatin content is assessed by dividing the nucleus in to 4 quadrants (drawing a line along the long and short axis of the nucleus) and looking at the nature of chromatin and its distribution

<table>
<thead>
<tr>
<th>Chromatin pattern</th>
<th>Polarity</th>
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<tbody>
<tr>
<td><img src="image1.png" alt="Chromatin pattern" /></td>
<td><img src="image2.png" alt="Polarity" /></td>
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   i. Fine, even (upper, left) - Normal
   ii. Fine, uneven (upper, Rt) - ASC-US
   iii. Coarse, even (lower, left) - Low grade lesions
   iv. Coarse, uneven (Lower, Rt) - High grade lesions
   g. Nucleoli size, shape and distribution also should be noted
      i. No or Micronucleoli - normal, ASC-US, SIIL
      ii. Macronucleoli - Carcinoma
   h. Polarity is determined by lines drawn along the long axis of the nuclei and it should run parallel to each other rather than crossing, to call it as polarity is maintained
      i. Polarity maintained (upper) - Normal, ASC-US, LSIL
      ii. Polarity lost (Lower) - HSIL, Carcinoma
In a nutshell, with above features, nuclei will fall under 3 categories
1. Normal – uniform, evenly sized, shaped and distributed nuclei with fine-even chromatin.
2. Low grade – slightly enlarged, overlapping, unevenly distributed mild to moderately pleomorphic nuclei with fine-uneven or coarse-even chromatin. Mitoses increased in number on careful analysis (you look for mitosis) but are of normal form. Polarity is maintained
3. High grade – Markedly enlarged nuclei (more than 3 times the size of normal nuclei),

5B. Normal cell seen in a Pap smear
a. Squamous cells
   - Superficial cells: Large polygonal cells with abundant pink/eosinophilic cytoplasm and pyknotic 5-6 micron nuclei (smaller than a RBC). Keratohyaline granules may be present in the cytoplasm. Estrogen is the hormone controlling these cells and hence increased in the states of estrogenic/hyper-estrogenic conditions (follicular phase of the cycle, estrogen producing tumors)
   - Intermediate cells: Large polygonal cells with abundant greenish cytoplasm with vesicular 8-10 micron nuclei (similar to or slightly larger than a RBC) with fine, evenly distributed chromatin. These cells are under the control of progesterone and hence predominant in luteal phase of the cycle and in hyper-progesterogenic states like pregnancy. (This forms the basis of hormonal evaluation and presence of more superficial cells in cases of pregnancy indicates hypoprogesterone and threatened abortion that can be treated by progesterone injections)
   - Parabasal/basal cells: As sampling is taken mainly from exfoliated cells and superficial layer of cervix, these deeper cells are seen less in normal Pap smears. These cells are small round to oval cells with moderate amount of cytoplasm that is less in basal when compared to parabasal cells. The nucleus is lightly larger than intermediate cells (9-11 micron, slightly larger than a RBC). It is also vesicular with fine, evenly dispersed chromatin. Increased number of these cells can be seen in
      - Cervical ulcers/erosions
      - Low estrogenic/androgenic phases
      - Menarche, postpartum/post menopause, Turner syndrome, status post bilateral oophorectomy
   - Metaplastic squamous cells: Parabasal/basal like cells with rigid cytoplasm and arranged in a pavement like or “Cookie cutting” pattern
b. Endocervical cells
   - Mucin producing cells with eccentrically placed round to oval vesicular nuclei and abundant vacuolated cytoplasm
   - End on view gives a “Honeycomb” appearance with uniformly sized, shaped and distributed cells. On lateral view, it appears as strips of columnar cells as seen in histology
   - Mitosis is not present
c. Endometrial cells
i. Epithelial cells
- Balls of small cells with scant cytoplasm and dark nuclei
- Nuclear molding is present
- Chromatin is coarse granular in character
(Endocervical cells are referred as “grapes” and endometrial cells as “raisins”)
- Some time seen as straight or branched tubular structures
- Often confused with HSIL, AIS and small cell carcinoma
ii. Stromal cells
- Two types of cells: Dense spindle cells (deep) or loose “histiocyte” like cells (superficial). The nuclei are uniform with fine granular chromatin.
- Capillaries can be seen passing through larger fragments

d. Trophoblastic and decidual cells
- Syncytiotrophoblasts can be rarely seen in smears from pregnant woman
- Large cells with abundant blue/pink cytoplasm with multiple round to oval dark nuclei
- Not a reliable predictor of impending abortion
- Decidual cells appear as isolated cells with abundant granular eosinophilic cytoplasm with a large vesicular nuclei and a prominent nucleoli
- When you see these cells, a call to the clinician is warranted

e. Inflammatory cells
- Neutrophils are always seen and do not represent inflammation. You should see cellular changes such as perinuclear halo and pseudo-orangeophilic cytoplasm before calling a smear as inflammatory changes
- Lymphocytes and plasma cells can also be present, scattered in the back ground
- Histiocytes are noted in cases of menstruation, pregnancy, post menopause, foreign body, radiotherapy, endometrial hyperplasia and carcinoma

f. Lactobacilli
- Gram positive rods seen as blue rods in Pap stain
- It is seen more in luteal phase, causing cytolysis (by metabolizing the glycogen of the squamous cells)

g. Artifacts and contaminants
- “Corn flaking”: Refractile brown artifact due to air bubble trapped over superficial cells. Retaining and recoversliping may reverse this
- “Cockle burrs”: Club shaped orange bodies arranged in a radial pattern. Composed of lipid, glycoprotein and calcium surrounded by histiocytes. Seen in pregnant patients and carry no clinical significance
- “Trichome”: Pale yellow, large, star shaped, 3 to 8 legged structures. Produced by different plants and vary in color, size and shape
- “Carpet beetle”: Arrow shaped structures that are contaminants from tampons or gauze pads
6. The Bethesda System 2014 (TBS)

It is a system used for reporting Pap smear results. It was introduced in 1988 and revised in 1991, 2001 and 2014. The name comes from the location (Bethesda, Maryland) of the conference that established the system. Clearly defined criteria are used for all the terminologies and the best of this system is, openly obtaining the opinion of the practicing pathologists through the Web portal during the 2001 update. All possibilities are carefully considered, well debated and conclusions are drawn based on scientific evidences. The abridged Bethesda system is as follows:

a. Specimen type – conventional or liquid based or others
b. Specimen adequacy
c. General categorization (optional)
   i. Negative for intraepithelial lesions/malignancy
   ii. Epithelial cell abnormality
   iii. Others
d. Interpretation/results
   i. Negative for intraepithelial lesions/malignancy

1. Organisms
   a. Trichomonas vaginalis
   b. Candida
   c. Bacterial vaginosis
   d. Actinomycosis
   e. Herpes simplex virus
   f. CMV

2. Other non-neoplastic findings (Optional, list not comprehensive)
   a. Reactive cellular changes (inflammation, repair, radiation, IUD)
   b. Glandular cells – status post hysterectomy
   c. Atrophy
   d. Endometrial cells in ≥ 45 yrs

ii. Epithelial cell abnormalities

1. Squamous cells
   a. Atypical squamous cells (ASC)
      i. Of undetermined significance (ASC-US)
      ii. Cannot exclude HSIL (ASC-H)
   b. Low grade sq. intraepithelial lesion (LSIL)
      Includes HPV & CIN 1
   c. High grade sq. intraepithelial lesion (HSIL)
      Includes CIN 2 & 3
   d. Squamous cell carcinoma

2. Glandular cells
   a. Atypical glandular cells (specify endocervical, endometrial, NOS)
   b. Atypical glandular cells – favor neoplastic (Specify as above)
   c. Endocervical adenocarcinoma in situ
   d. Adenocarcinoma (specify as above)

3. Other malignancies

   e. Adjunctive testing
   f. Computer assisted interpretation
   g. Educational notes and suggestion (optional)
a. Specimen type

More and more centers are started using the liquid based PAP smears rather than conventional collection. The main drawback is the cost of the liquid based specimen collection. In India not all the patients are insured and most of them pay from their pocket. But as the Central Govt has proposed the health cover for the poor people (Budget – Feb 2018) hopefully the scenario will be changing soon.

b. Specimen adequacy

- Satisfactory
  a. Well preserved and visualized cells should be
    i. $5000$ – for liquid based preparation
    ii. $8000-12000$ – for conventional smears
       (Reference images for conventional and spot counting for liquid based preparations)
  b. Note the presence of transformation zone/endocervical cells ($10$ or more sq. metaplastic or endocervical cells). It is a “quality indicator” and the clinicians have to take a call if there is no T zone/ endocervical cell in a smear.
  c. Obscuring elements (inflammation, blood, drying artifact, others) should be mentioned if it obscures $50-75\%$ of cells

- Unsatisfactory
  a. Specimen rejected
    i. Lack of or mismatched patient information
    ii. Slide broken beyond repair (unacceptable specimen due to other causes)
  b. Specimen processed
    i. Insufficient squamous cells
    ii. Obscuring elements more than $75\%$ of epithelial cells

c. General categorization (optional)

  i. Negative for intraepithelial lesions/malignancy
  ii. Epithelial cell abnormality
  iii. Others

d. Interpretation/results

i. Negative for intraepithelial lesions / malignancy

1. Organisms

   a. Trichomonas vaginalis
      - $15$ to $30$ micron
      - Pear shaped
      - Pale, eccentrically placed nucleus
      - Red cytoplasmic granules (endoplasmic reticulum)
      - Often accompanied by Leptothrix – Pathogenic long filamentous bacterium

   b. Candida
      - Pink yeast form, $3$ to $7$ micron in diameter, budding also may be present
      - Long pseudo hyphae may be seen
      - Tangles of squamous cells around pseudo hyphae (Shish kebabs)

   c. Bacterial vaginosis
      - Curved bacilli or coccobacilli or mixed bacteria
      - “Filmy” appearance of the slide
      - Clue cells
d. Actinomyces
   - Tangled clumps of Gram positive bacteria (cotton balls)
   - Often associated with Intra Uterine Devices (IUD)

e. Herpes simplex virus
   - 3M – Multinucleation, molding of nuclei & margination of chromatin

2. Other non-neoplastic findings (Optional, list not comprehensive)

a. Reactive cellular changes (inflammation, repair, radiation, IUD)
   - Enlarged nuclei with bi or multinucleation
   - Prominent nucleoli
   - Cells running in one direction (school of fish) or being pulled out (like taffy)
   - In inflammation, perinuclear halo & pseudo orangeophilia of the squamous epithelium noted (mere neutrophils are not enough for the diagnosis of inflammation)
   - Radiation: Large polychromatic, bizarre cells with enlarged nucleus, multinucleation & cytoplasmic/nuclear vacuolations. Nuclear cytoplasmic ratio is maintained
   - IUD: single or clusters of cells with cytoplasmic vacuolations (may resemble signet cell). The differential is adenocarcinoma and HSIL and be cautious in diagnosing these in the presence of IUD. Please ask for a repeat Pap after removing the IUD

b. Glandular cells – status post hysterectomy
   - Wrong history/patient
   - Partial hysterectomy
   - Rarely from Bartholin/ other para vaginal glands
   - Atrophic cells
   - Therapy induced metaplasia of squamous cells
   - Fallopian tube prolapse
   - Vaginal adenosis/endometriosis
   - Rectovaginal/ vesicovaginal fistula
   - Recurrent adenocarcinoma

c. Atrophy
   - Increased number of parabasal cells and basal cells in sheets and syncytial-like aggregates or hyperchromatic crowded groups
   - Naked nuclei (small cells) may be seen
   - Cells have high N/C ratio but uniform chromatin
   - Pseudokeratinized cells (pink to orangeophilic cytoplasm) are due to degeneration
   - Severe atrophy can show dirty background with inflammation, debris, old blood, blue blobs (Represent condensed mucus, degenerated bare nuclei or precipitating hematoxylin) and giant cells
   - In liquid based cytology, background of atrophic smear is cleaner
   - May resemble urothelial metaplasia, but cells have prominent intercellular bridges
   - Nuclei are uniform, evenly spaced, often elongated with grooves
d. Others

- Tubal metaplasia: Strips of crowded, stratified columnar and goblet cells with terminal bar and cilia. The nuclei can be enlarged, pleomorphic & hyperchromatic, mistaken for AGC. The cilia and the terminal bar are diagnostic of tubal metaplasia
- Keratotic cellular changes:
- Hyperkeratosis - Anucleated, mature, polygonal squamous cells (prolapsed uterus). Can be a contaminant from vulvar area.
- Parakeratosis. Small, heavily keratinized squamous cells with dense orangeophilic cytoplasm and small pyknotic nuclei. When these show nuclear atypia, should be called as dyskeratosis and categorized as epithelial cell abnormality. History of previous epithelial cell abnormality with or without treatment should be obtained
- Follicular cervicitis: Commonly associated with Chlamydia infection. Heterogenous population of lymphoid cells with scattered tingible body macrophages. Some time clusters of follicular center cells are misinterpreted as HSIL. Most of the time the lymphoid cells are arranged as trails seen in a bone marrow aspirate, rather than clusters of HSIL cells.

ii. Epithelial cell abnormalities

1. Squamous cells
   a. Atypical squamous cells (ASC)
      i. Of undetermined significance (ASC-US)
      ii. Cannot exclude HSIL (ASC-H)
   b. Low grade sq. intraepithelial lesion (LSIL)
      Includes HPV & CIN 1
   c. High grade sq. intraepithelial lesion (HSIL)
      Includes CIN 2 & 3
   d. Squamous cell carcinoma

<table>
<thead>
<tr>
<th>Character</th>
<th>ASC-US</th>
<th>ASC-H</th>
<th>LSIL</th>
<th>HSIL</th>
<th>Sq. cell ca.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Abnormal cells</td>
<td>Few</td>
<td></td>
<td>Many</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Classic Koliocytes</td>
<td>Nil</td>
<td></td>
<td>Many</td>
<td>Few</td>
<td></td>
</tr>
<tr>
<td>3. N:C ratio</td>
<td>&lt; 1/3</td>
<td>&gt; 2/3</td>
<td>1/3 to 2/3</td>
<td>&gt; 2/3</td>
<td>Varies</td>
</tr>
<tr>
<td>4. Nuclear membrane</td>
<td>Regular</td>
<td></td>
<td></td>
<td>Irregular</td>
<td></td>
</tr>
<tr>
<td>5. Chromatin</td>
<td>Uniform, fine, granular</td>
<td>Uniform, coarse</td>
<td>Clumped, adherent to nuclear memb.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Nucleoli</td>
<td>Absent</td>
<td>Present</td>
<td></td>
<td>Absent</td>
<td>Present</td>
</tr>
<tr>
<td>7. Tad pole cells</td>
<td>Absent</td>
<td></td>
<td></td>
<td></td>
<td>Present</td>
</tr>
<tr>
<td>8. Tumor diathesis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. HPV typing</td>
<td>No/ Low risk</td>
<td>Low risk</td>
<td>High risk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Koliocytes: Mono or binuclear cells with enlarge nuclei with fine granular chromatin with mild nuclear membrane irregularity and nuclear groove (resemble coffee bean). Cytoplasm shows a large cavitation with a sharp inner edge. Indicates HPV infection and qualifies for LSIL by itself.
2. Glandular cells
   a. Atypical glandular cells - AGC (specify endocervical, endometrial, NOS)
   b. Atypical glandular cells – favor neoplastic (Specify as above)
   c. Endocervical adenocarcinoma in situ - AIS
   d. Adenocarcinoma (specify as above)

<table>
<thead>
<tr>
<th>Character</th>
<th>Normal</th>
<th>AGC</th>
<th>AIS</th>
<th>Adenoca.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Abnormal cells</td>
<td>Nil</td>
<td>Few</td>
<td>Many</td>
<td></td>
</tr>
<tr>
<td>2. Cell border</td>
<td>Distinct</td>
<td>Indistinct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Pseudostratification</td>
<td>Nil</td>
<td>Present</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Feathering</td>
<td>Nil</td>
<td>Present</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Disorganization</td>
<td>No (honeycomb)</td>
<td>Yes (drenched honey comb)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Nuclear enlargement/overlapping</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Chromatin</td>
<td>Fine, even</td>
<td>Coarse, uneven</td>
<td>coarse, uneven</td>
<td></td>
</tr>
<tr>
<td>8. Nucleoli</td>
<td>Nil</td>
<td>Micronucleoli</td>
<td>Macronucleoli</td>
<td></td>
</tr>
<tr>
<td>9. Mitosis</td>
<td>Nil</td>
<td>Nil/rare</td>
<td>Few</td>
<td>Many</td>
</tr>
<tr>
<td>10. Tumor diathesis</td>
<td>Nil</td>
<td></td>
<td>Present</td>
<td></td>
</tr>
</tbody>
</table>

Atypical Glandular cells – favor neoplastic
No defined criteria. It should be more than ASC and less than AIS. It is very easy to mention theoretically, but very difficult to apply practically. Hope they will remove this terminology in the future update…!!

Many times, glandular lesions may coexist squamous abnormality and we have to document both. Some times, it is very difficult to differentiate both, especially HSIL and AIS. The following findings favor AIS

1. Strips of columnar cells
2. Feathering
3. Gland formation, rosettes
4. Absence of koilocytes
5. Clean background

Likewise, endocervical lesions and endometrial lesions are also difficultly to differentiate at times. The following table may be useful

<table>
<thead>
<tr>
<th>Character</th>
<th>Endocervical lesion</th>
<th>Endometrial lesion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age of the patient</td>
<td>Young (reproductive age group)</td>
<td>Elderly (mostly postmenopausal)</td>
</tr>
<tr>
<td>2. Cell border</td>
<td>Distinct (grapes)</td>
<td>Indistinct (raisins)</td>
</tr>
<tr>
<td>3. Cytoplasm</td>
<td>More, mucin +</td>
<td>Less, foamy</td>
</tr>
<tr>
<td>4. Over crowding of nuclei</td>
<td>Less</td>
<td>More (morphology not clear)</td>
</tr>
<tr>
<td>5. Feathering</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>6. Associated histiocytes</td>
<td>Less</td>
<td>More</td>
</tr>
<tr>
<td>7. Tumor diathesis</td>
<td>Hemorrhagic</td>
<td>Watery</td>
</tr>
<tr>
<td>8. Associated HPV/HSIL</td>
<td>Present</td>
<td>Absent</td>
</tr>
</tbody>
</table>

3. Other Tumors
Rare Gynecological tumors: Small cell ca., sarcomatoid ca., MMMT, sarcoma, lymphoma, melanoma
Metastasis: common from ovary, fallopian tube, colon, stomach & breast
Endometrial cells in a women ≥ 45 years
- Should be reported as “Negative for squamous intraepithelial lesion” with a note indicating:
- Endometrial cells after the age 45, particularly out of phase or after menopause may be associated with benign endometrium, hormonal alteration and less commonly endometrial hyperplasia (12%) or carcinoma (6%)
- Pap test with only histiocytes/superficial stromal cells should be reported as “Negative for intraepithelial lesion or malignancy.” Histiocytes/superficial stromal cells alone do not have independent diagnostic significance and should NOT be reported in the same context as exfoliated glandular cells

**e. Adjunctive testing**

i. Molecular testing for HPV, Chlamydia, Gonorrhea & others like p16
ii. Indicate the test method
iii. Result should be interpreted and understandable for the clinician
iv. Result should be correlated with the cytological features

**f. Computer assisted interpretation**

i. Type of instrument used for screening & interpretation
ii. Screening by automation or manual & automated
   1. Correlation of automated and manual results
   2. Name of the technologist verifying the automated data

**g. Educational notes and suggestion (optional)**

i. Concise and consistent with the guidelines of professional organizations
ii. Should be rendered in cases of –
   1. Unsatisfactory specimen (to improve the quality of repeat sample)
   2. Further triage and management
   3. Morphological features are ambiguous
   4. Complex cases

**7. Quality Control in Cytology**

It will be dealt in detail in another presentation, but for the completion sake, the following are included
a. Errors have to be reduced
b. Ratio of ASC-US and AGC has to be within allowed percentage
c. Correlation of cytology with histology (biopsies, definitive surgery specimens)
d. External and internal quality control
e. In case of an error, do a RCA (Root Cause Analysis) & CAPA (Corrective and Preventive Action)
Measures to reduce the errors

<table>
<thead>
<tr>
<th>Task</th>
<th>Error</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation</td>
<td>Douching/menses</td>
<td>Patient education</td>
</tr>
<tr>
<td>Sampling</td>
<td>Lack of endocervix</td>
<td>Clinician education/samplers</td>
</tr>
<tr>
<td></td>
<td>Inflammation/blood</td>
<td>Liquid based preparation</td>
</tr>
<tr>
<td>Fixation/staining</td>
<td>Air-drying/poor staining</td>
<td>Liquid based preparation</td>
</tr>
<tr>
<td>Locating cells</td>
<td>Incomplete scanning</td>
<td>Stage Controllers</td>
</tr>
<tr>
<td></td>
<td>Cells obscured</td>
<td>Liquid based preparation</td>
</tr>
<tr>
<td></td>
<td>Too few cells</td>
<td>Computer screening</td>
</tr>
<tr>
<td>Identifying cells</td>
<td>Significance not apparent</td>
<td>Computer screening</td>
</tr>
<tr>
<td></td>
<td>Missing the cells</td>
<td>New regulations (CLIA 88)</td>
</tr>
</tbody>
</table>

8. Conclusion

1. Pap smear remains one of the most successful cancer screening methods developed
2. Criteria should be applied for the interpretation, starting from specimen adequacy
3. The Bethesda System 2001 should be followed for consistency in the reporting
4. Frequent updating regarding the diagnostic criteria and newer technologies available to use is a must
5. Clinical correlation and follow-up is essential

9. References

2. http://www.asccp.org/LinkClick.aspx?fileticket=uUGOqspCBU%3d&tabid=5964

Thanks a lot ....... and Have a happy day ....
Urine cytology - Update

Urine examination has been a time tested medical practice, from very ancient times and cytology, an established diagnostic test in patients with bladder cancer. Has evolved over the years and now even molecular tests are being attempted in this simple sample.

It can be obtained as voided sample, catheter sample, washing or brushing. Adequacy is dependent on the type. Main indication is diagnosis of high grade carcinomas and follow up of treated malignancies. Evaluation of hematuria is also a less common indication. Apart from tumours, this is useful also for inflammatory conditions and infections. BK virus infection can be detected in urine samples. Cell blocks can be prepared from aspirates, washings or brushings.

The preparations normally contain urothelial cells including umbrella cells, squamous cells (normal/metaplastic), columnar cells and a few inflammatory cells. Red blood cells, spermatozoa, crystals and lubricants can also form part of the population in urine smears, along with degenerated epithelial cells which have exfoliated.

Abnormalities detected on cytology include mainly high grade urothelial carcinoma and carcinoma in situ. Low grade lesions are more difficult to diagnose. Urine cytology as a screening test for bladder cancer has been attempted, though not very effectively due to low sensitivity.

Infections, particularly viral infections can be detected using this technique, such as polyoma, CMV and HPV. Other non neoplastic conditions that cytology might help are endometriosis, malacoplakia, calculi and crystals of various types.

Special studies that can be done using urine preparations are FISH, flow cytometry, IHC, IF and molecular tests such as microassays, DNA methylation and some enzyme immunoassays as well.

To summarise, despite many shortcomings, this is still a useful test for diagnosis and follow up of urothelial carcinoma patients, though not a very effective screening tool.
Over the last 50 years the use of cytology in breast has waxed and waned. It has been replaced largely by needle core biopsies – especially where medical litigation is rife. However, FNA can provide an accurate, rapid and cost effective diagnosis for most breast abnormalities with an overall diagnostic sensitivity ranging from 60% to 100%, with a specificity of upto 99%. In the modern era, breast FNA has been confronted with new roles and challenges. It is now routinely expected that breast FNA will provide an accurate diagnosis, analyze the biologic behavior of the tumor, supply biomarker information such as estrogen/progesterone receptor status, comment on cell proliferation index, and determine prognostic indicators such as Her2neu expression. These expectations can only be met if an adequate sample is obtained and the pathologist is on site to triage the material for processing.

The significance of triple test in breast cytology needs to be emphasized. Pathologists also need to be aware of the limitations of breast cytology, especially with the grey zone areas. We need to be aware of diagnostic pitfalls in the grey zone area and indicate the need for a biopsy in such instances.

IAC consensus 2016 is soon to be updated with the further modifications based on the current scenario and expectations with appropriate management guidelines. This revision has happened after almost 20 years since the NCI consensus in 1997. New techniques in cytology like the Liquid based cytology, its diagnostic accuracy and utility of residual material need to be addressed. Also, the need for molecular subtyping of breast cancers with further classification of the triple negative tumours has to be met, sometimes with only the FNAC material.

Hence, the role of cytopathology in breast FNAC has undergone several changes over the years and yet continues to remain a primary diagnostic modality, especially in our country.
The 2017 revision of the Bethesda System for Reporting Thyroid Cytopathology (TBSRTC) has established a standardized, category-based reporting system for thyroid fine-needle aspiration (FNA) specimens. The 2017 revision reaffirms that every thyroid FNA report should begin with one of six diagnostic categories, the names of which remain unchanged since they were first introduced: (i) nondiagnostic or unsatisfactory; (ii) benign; (iii) atypia of undetermined significance (AUS) or follicular lesion of undetermined significance (FLUS); (iv) follicular neoplasm or suspicious for a follicular neoplasm; (v) suspicious for malignancy; and (vi) malignant. There is a choice of two different names for some of the categories. A laboratory should choose the one it prefers and use it exclusively for that category. Synonymous terms (e.g., AUS and FLUS) should not be used to denote two distinct interpretations. Each category has an implied cancer risk that ranges from 0% to 3% for the "benign" category to virtually 100% for the "malignant" category, and, in the 2017 revision, the malignancy risks have been updated based on new (post 2010) data. As a function of their risk associations, each category is linked to updated, evidence-based clinical management recommendations. The recent reclassification of some thyroid neoplasms as noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP) has implications for the risk of malignancy, and this is accounted for with regard to diagnostic criteria and optional notes. Such notes can be useful in helping guide surgical management. TBSRTC has been widely adopted in the USA and worldwide and endorsed by the American Thyroid Association. It has gone far toward improving communication between cytopathologists and their clinical colleagues and has provided a uniform template for the sharing of data among investigators.

Let's hope that as cytopathologists, the 2017 BSRTC will continue to stimulate interest in all, in the improvement of thyroid cytopathologic diagnosis and the betterment of patients with thyroid nodular disease.
With its inception, The Bethesda System for Reporting Thyroid Cytopathology (TBSRTC) established a standardized reporting system with a limited number of diagnostic categories for thyroid fine-needle aspiration (FNA) specimens. Using TBSRTC, cytopathologists can communicate their interpretations to the referring physician in terms that are succinct, unambiguous, and clinically useful (1–3). TBSRTC has been widely adopted in the United States and in many places worldwide and has been endorsed by the American Thyroid Association (4). It has improved communication and provided a uniform template for sharing data among investigators. Since its acceptance in clinical practice, however, questions have arisen over the proper use of the diagnostic categories, the associated risks of malignancy, and the appropriate management. By 2016, the time had come to consider revisions. The 2017 revision described herein was inspired by new data and new developments in the field of thyroid pathology: revised guidelines for the management of patients with thyroid nodules (4), the introduction of molecular testing as an adjunct to cytopathologic examination, and the reclassification of the noninvasive follicular variant of papillary thyroid carcinoma as noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP) (5). Much of the groundwork for this revision was laid down by a symposium entitled “The Bethesda System for Reporting Thyroid Cytopathology (TBSRTC): Past, Present, and Future” at the 2016 International Congress of Cytology in Yokohama, Japan. Preparations for the symposium began 12 months earlier with the designation of a steering group and the appointment of an international panel of 16 cytopathologists and an endocrinologist, whose task was to review and summarize the published literature in English since the introduction of TBSRTC. The symposium, moderated by Drs. Syed Ali and Philippe Vielh, took place on May 30, 2016, and the discussions and recommendations from the symposium have been summarized in a publication by Pusztaszeri et al. (6). Based on the panel’s recommendation, the six original general categories (“nondiagnostic/unsatisfactory” [ND/UNS], “benign,” “atypia of undetermined significance/follicular lesion of undetermined significance” [AUS/FLUS], “follicular neoplasm/ suspicious for a follicular neoplasm” [FN/SFN], “suspicious for malignancy” [SUS], and “malignant”) have been retained in the 2017 revision, and a revised atlas is in press, with updated and expanded chapters devoted to these categories and refined definitions, morphologic criteria, and explanatory notes (7).
For clarity of communication, the 2017 BSRTC continues to recommend that each report begin with a general diagnostic category. Because they are more ambiguous and less clearly descriptive, numerical designations alone (e.g., "Bethesda III") are discouraged for the purposes of cytologic reporting, although the numerical designations may be used in conjunction with the category name, for example "atypia of undetermined significance (Bethesda III)." The six general diagnostic categories are unchanged and are shown in upper case in Table 1.

Some categories have two alternative names. A laboratory should choose the one it prefers and use it exclusively for that category. Synonymous terms (e.g., AUS and FLUS) should not be used to denote two distinct interpretations.

### Table 1. The 2017 Bethesda System for Reporting Thyroid Cytopathology: Recommended Diagnostic Categories

<table>
<thead>
<tr>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. NONDIAGNOSTIC OR UNSATISFACTORY</td>
</tr>
<tr>
<td>Cyst fluid only</td>
</tr>
<tr>
<td>Virtually acellular specimen</td>
</tr>
<tr>
<td>Other (obscuring blood, clotting artifact, etc.)</td>
</tr>
<tr>
<td>II. BENIGN</td>
</tr>
<tr>
<td>Consistent with a benign follicular nodule (includes</td>
</tr>
<tr>
<td>adenomatoid nodule, colloid nodule, etc.)</td>
</tr>
<tr>
<td>Consistent with lymphocytic (Hashimoto) thyroiditis in</td>
</tr>
<tr>
<td>the proper clinical context</td>
</tr>
<tr>
<td>Consistent with granulomatous (subacute) thyroiditis</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>III. ATYPIA OF UNDETERMINED SIGNIFICANCE or FOLLICULAR</td>
</tr>
<tr>
<td>LESION OF UNDETERMINED SIGNIFICANCE</td>
</tr>
<tr>
<td>IV. FOLLICULAR NEOPLASM or SUSPICIOUS FOR A FOLLICULAR</td>
</tr>
<tr>
<td>NEOPLASM</td>
</tr>
<tr>
<td>Specify if Hurthle cell (oncocytic) type</td>
</tr>
<tr>
<td>V. SUSPICIOUS FOR MALIGNANCY</td>
</tr>
<tr>
<td>Suspicious for papillary carcinoma</td>
</tr>
<tr>
<td>Suspicious for medullary carcinoma</td>
</tr>
<tr>
<td>Suspicious for metastatic carcinoma</td>
</tr>
<tr>
<td>Suspicious for lymphoma</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>VI. MALIGNANT</td>
</tr>
<tr>
<td>Papillary thyroid carcinoma</td>
</tr>
<tr>
<td>Poorly differentiated carcinoma</td>
</tr>
<tr>
<td>Medullary thyroid carcinoma</td>
</tr>
<tr>
<td>Undifferentiated (anaplastic) carcinoma</td>
</tr>
<tr>
<td>Squamous-cell carcinoma</td>
</tr>
<tr>
<td>Carcinoma with mixed features (specify)</td>
</tr>
<tr>
<td>Metastatic carcinoma</td>
</tr>
<tr>
<td>Non-Hodgkin lymphoma</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

Adapted with permission from Ali and Cibas (7).
Each of the categories has an implied cancer risk (ranging from 0% to 3% for the benign category to virtually 100% for the malignant category) that links it to an evidence-based clinical management guideline (Table 2).

**Table 2. The 2017 Bethesda System for Reporting Thyroid Cytopathology: Implied Risk of Malignancy and Recommended Clinical Management**

<table>
<thead>
<tr>
<th>Diagnostic category</th>
<th>Risk of malignancy if NIFTP ≠ CA (%)</th>
<th>Risk of malignancy if NIFTP = CA (%)</th>
<th>Usual management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nondiagnostic or unsatisfactory</td>
<td>5–10</td>
<td>5–10</td>
<td>Repeat FNA with ultrasound guidance</td>
</tr>
<tr>
<td>Benign</td>
<td>0–3</td>
<td>0–3</td>
<td>Clinical and sonographic follow-up</td>
</tr>
<tr>
<td>Atypia of undetermined significance or follicular lesion of undetermined significance</td>
<td>6–18</td>
<td>~10–30</td>
<td>Repeat FNA, molecular testing, or lobectomy</td>
</tr>
<tr>
<td>Follicular neoplasm or suspicious for a follicular neoplasm</td>
<td>10–40</td>
<td>25–40</td>
<td>Molecular testing, lobectomy</td>
</tr>
<tr>
<td>Suspicious for malignancy</td>
<td>45–60</td>
<td>50–75</td>
<td>Near-total thyroidectomy or lobectomy&lt;sup&gt;b,c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Malignant</td>
<td>94–96</td>
<td>97–99</td>
<td>Near-total thyroidectomy or lobectomy&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Adapted with permission from Ali and Cibas (7).

<sup>a</sup>Actual management may depend on other factors (e.g., clinical, sonographic) besides the FNA interpretation.

<sup>b</sup>Some studies have recommended molecular analysis to assess the type of surgical procedure (lobectomy vs. total thyroidectomy).

<sup>c</sup>In the case of “suspicious for metastatic tumor” or a “malignant” interpretation indicating metastatic tumor rather than a primary thyroid malignancy, surgery may not be indicated.

NIFTP, noninvasive follicular thyroid neoplasm with papillary-like nuclear features; CA, carcinoma; FNA, fine-needle aspiration.

Discussion of its application into day to day reporting of thyroid FNAC is what is needed and is being illustrated in the talks.

**References:**


Slide Seminar Titled “A stich in time saves nine” - Cytology Slide Seminar
<table>
<thead>
<tr>
<th>PP No</th>
<th>Title of Poster</th>
<th>Presenting Author</th>
<th>Institution of Presenting Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP - 01</td>
<td>The grading and scoring system a useful tool in cytological diagnosis of breast lesions (modified masoods scoring)</td>
<td>Dr. Girija</td>
<td>JSS Medical college, Mysuru</td>
</tr>
<tr>
<td>PP - 02</td>
<td>Malignant peripheral nerve sheath tumor with rhabdomyoblastic differentiation (malignant triton tumor).</td>
<td>Dr. Veerapaneni Sandeep</td>
<td>S. Njalingappa Medical College and H.S.K Hospital and Research Centre, Bagalkot</td>
</tr>
<tr>
<td>PP - 03</td>
<td>Onyx in the spine: A diagnostic dilemma</td>
<td>Dr. Richa Yadav</td>
<td>Kasturba Medical College, Manipal University, Mangalore</td>
</tr>
<tr>
<td>PP - 04</td>
<td>Pitfalls in cytological diagnosis of ductal carcinoma in lactating breast – a case report.</td>
<td>Dr. Hajra K. Mehdi</td>
<td>Sri Devaraj Urs Medical College, Kolar</td>
</tr>
<tr>
<td>PP - 05</td>
<td>Diagnosis of Solid Pseudopapillary Tumor of Pancreas on Fine needle aspiration cytology: A Rare Entity.</td>
<td>Dr. Sameeranandana Reddy C</td>
<td>Vydehi Institute of Medical Sciences &amp; Research Centre, Bangalore</td>
</tr>
<tr>
<td>PP - 06</td>
<td>Non ossifying fibroma mimicking conventional giant cell tumor of bone on cytology</td>
<td>Dr. Parvathaneni Sowmya</td>
<td>Kempegowda Institute of Medical Sciences, Bangalore</td>
</tr>
<tr>
<td>PP - 07</td>
<td>Mucinous carcinoma liver- primary? Or metastatic?</td>
<td>Dr. Chandrahasa</td>
<td>S.D.M. College of Medical Sciences and Hospital, Dharwad</td>
</tr>
<tr>
<td>PP - 08</td>
<td>Malignant Oncocytoma of Parotid Gland- A Rare Malignancy</td>
<td>Dr. Nimisha Gupta</td>
<td>Vydehi Institute of Medical Sciences and Research Centre, Bangalore</td>
</tr>
<tr>
<td>PP - 09</td>
<td>A consortium of rare fungi in sputum cytology</td>
<td>Dr Deepika</td>
<td>K.V.G Medical College and Hospital, Sullia</td>
</tr>
<tr>
<td>PP - 10</td>
<td>Angiolymphoïd hyperplasia with eosinophilia behind Right ear</td>
<td>Dr Amrita Dhakal Sharma</td>
<td>K.V.G. Medical College and Hospital, Sullia</td>
</tr>
<tr>
<td>PP - 11</td>
<td>Anaplastic carcinoma of thyroid.</td>
<td>Dr. Jaydeep G</td>
<td>Dr B R Ambedkar Medical College, Bangalore</td>
</tr>
<tr>
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Abstracts - Posters
**Abstract No: PP 01**

**Title:** The Grading and Scoring System - A Useful Tool in Cytological Diagnosis of Breast Lesions (Modified Masoods Scoring)

**Authors:** Dr Girija, Dr. Nandini NM

**Designation of Presenting Author:** Postgraduate

**Institution:** JSS Medical College, JSS Institute of Higher Education, Mysuru

**Email Id & Mobile No of presenting Author:** girijapatil14391@gmail.com, 7795107158

**Abstract**

Breast cancer is the second most common cancer in women. FNAC of breast provides a cost effective, painless method of detection of various breast lesions. Modified Masood scoring system (MMSS) helps to improve the diagnostic accuracy of FNAC mainly in the grey zone lesions. Thirty cases of FNAC breast were studied by using MMSS. Out of 30 cases studied, majority were malignancy i.e. 12 cases, followed by Fibro adenoma-10, Non Proliferative breast disease (NPBD) -3, Proliferative breast disease (PBD) with atypia – 2 and others -3. These cases were retrospectively studied by comparing MMSS with modified Bloom Richardson grading. Most of the malignant lesions were in the age group of 50-70yrs and non malignant lesions in younger age group and all the patients were females. This cytological grading system will help the cytologist to categorize any breast lump accordingly and can be used to improve diagnostic accuracy of NPBD and PBD without atypia cases as the prognosis and treatment varies. The MMSS method correlates with the Bloom Richardson’s scoring of breast carcinoma. Also helps in surgical management of breast lesions.

**Key Words:** Breast, Cytology, Modified Masood Score

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**Abstract No: PP 02**

**Title:** Malignant Peripheral Nerve Sheath Tumor With Rabdomyoblastic Differentiation (Malignant Triton Tumor).

**Authors:** Dr. Veerapaneni sandeep, Dr. S.S Hiremath, Dr. S S Inamdar, Dr. Prabhu M H, Dr. Smita K

**Designation of Presenting Author:** Post graduate student

**Institution:** S. Nijjalingappa Medical College and HSK Research Centre, Navanagar, Bagalkot

**Email Id & Mobile No of presenting Author:** sandeepc309@gmail.com, 919990402447

**Abstract**

Malignant peripheral nerve sheath tumor with Rabdomyoblastic differentiation, malignant triton tumor(MTT), has a rare incidence. Patient 71yrs/ male having swelling in Right Hand over last 1 month. No h/o Trauma. He had same swelling 2yrs back which was diagnosed as Peripheral Nerve Sheath Tumour on histopathology and Operated. Radiotherapy was given. Swelling reappeared at same site after 3 months of radiation. FNAC of swelling shows large spindle cells having elongated buckled nuclei. Some have pointed end, nuclear chromatin is coarse and nucleus are of varying sizes. Few cells show Rabdomyoblastic differentiation. Several neoplasms that qualify as malignant mesenchymoma but are frequently treated as distinct and separate entities. For example, malignant peripheral nerve sheath tumors may contain areas of rhabdomyosarcoma (malignant Triton tumor), yet these lesions have never been categorized as "malignant mesenchymoma." Tumors composed of skeletal muscle and neural elements are collectively referred as Triton tumors(MTT). It constitutes about 5% of all MPNSTs. Most MPNST are high grade sarcoma with a high likelihood of producing local recurrence and distant metastasis.

**Key Words:** Triton Tumor, MPNST, High Grade Sarcoma, FNAC
**Abstract No: PP 03**

**Title:** Onyx in the spine: A diagnostic dilemma

**Authors:** Dr Richa Yadav, Dr Sharada Rai, Dr Pooja K Suresh, Dr Chaithra GV, Dr Cheryl S Phillipose

**Designation of Presenting Author:** Post Graduate (DCP)

**Institution:** Kasturba Medical College, Manipal University, Mangalore

**Email Id & Mobile No of presenting Author:** richay632@gmail.com, 99720930

**Abstract:**
Primary pigmented spinal lesions are uncommon comprising of melanocytosis, melanocytoma, melanoma and schwannoma. We present a case of pigmented spinal lesion and focus on diagnostic difficulties in cytology. A 35-year-old female presented with bilateral lower limb weakness. As radiology (MRI) was suggestive of ependymoma at T8-T11 & clinically as hemangioma, intraoperative crush cytology was done. Moderately cellular smears showed cells with moderate cytoplasm, oval to spindled, vesicular nucleus, in a background of extensive brownish-black pigment and pigment-laden macrophages. Mitosis was absent. Differentials of melanocytoma and pigmented schwannoma were considered. Histologically the cells were arranged in sheets and nests surrounded by a network of reticulin fibres with abundant intracytoplasmic melanin pigment. Nuclear pleomorphism and mitotic figures were absent. Immunohistochemically the tumour cells showed strong positivity for S100, GFAP and faint positivity for HMB45. MIB index was low (4%). Reticulin stain highlighted pericellular and nested pattern. A diagnosis of spinal melanocytic schwannoma was rendered.

Differentiating melanocytomas from pigmented schwannoma is difficult by cytology as melanocytomas have scant to moderate cytoplasm with rounded nuclei and later show spindly to oval cells with vesicular nuclei with melanin pigment in both cases. Histopathology with immunohistochemistry aids in the final diagnosis.

**Key Words:** Pigmented Schwannoma, HMB

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**Abstract No: PP 04**

**Title:** Pitfalls in Cytological Diagnosis of Ductal Carcinoma in Lactating Breast – A Case Report.

**Authors:** Dr Hajra K. Mehdi, Dr Kalyani R, Dr CSBR Prasad, Dr Manan B. Shah.

**Designation of Presenting Author:** Postgraduate

**Institution:** Sri Devaraj Urs Medical College, Sri Devaraj Urs Academy of Higher Education and Research, Tamaka, Kolar. Karnataka

**Email Id & Mobile No of presenting Author:** hajra.mehdi@yahoo.com, 9663328835

**Abstract:**
Due to the hormonal changes associated with pregnancy and postpartum period, benign lesions are known to occur in the breast. These lesions can either be de novo or can be changes occurring in a pre-existing breast lesion. However, these benign changes can sometimes show some degree of atypia due to the high levels of progesterone and prolactin, thus being a pitfall in the diagnosis of an underlying carcinomatous change. Only a few cases in the literature describe patients with lactating adenoma undergoing malignant transformation. We present a case with a mass in bilateral breasts in a 23 year old lactating woman who was diagnosed initially as hormonal changes due to lactation on cytology. On follow up cytology and histopathology it was diagnosed as infiltrating ductal carcinoma.

**Key Words:** Fine needle aspiration cytology, Lactating breast, Ductal carcinoma.
Abstract No: PP 05
Title: Diagnosis of Solid Pseudopapillary Tumor of Pancreas on Fine needle aspiration cytology: A Rare Entity.
Authors: Dr Sameeranandana Reddy C, Dr Niranjan J, Dr A S Shivarudrappa.
Designation of Presenting Author: Postgraduate
Institution: Vydehi Institute of Medical Sciences & Research Centre, Bangalore

Email Id & Mobile No of presenting Author: sameeranandan@gmail.com, 9700300989

Abstract
Solid pseudopapillary tumor (SPPT) of pancreas is a rare epithelial neoplasm which accounts for 1-2% of all exocrine pancreatic tumors and tends to present in young females in 2nd to 3rd decades of life. A 18yr female patient presented with abdominal mass. USG revealed a well-defined cystic mass with heterogenous appearance arising from head of pancreas. Fine needle aspiration cytology (FNAC) is done and smears showed classical features of papillae formation having delicate vascular cores and hyaline globules suggestive of SPPT. Surgical excision of mass was done, histopathological examination confirmed the diagnosis. SPPT is a rare, low grade malignant neoplasm with a unique cytomorphology. FNAC appears to be value in specific diagnosis of SPPT preoperatively. Surgical excision is choice of treatment, prognosis is excellent and recurrence is uncommon. Here by we are presenting a rare case of pancreatic tumor diagnosed on FNAC.

Keywords: Solid Pseudopapillary tumor, Epithelial neoplasm, Pancreas.

Abstract No: PP 06
Title: Non Ossifying Fibroma Mimicking Conventional Giant Cell Tumor of Bone On Cytology
Authors: Dr Parvathaneni Sowmya, Dr Hemalata M, Dr Manjula CP
Designation of Presenting Author: Postgraduate
Institution: Kempegowda Institute of Medical Sciences, Bengaluru

Email Id & Mobile No of presenting Author: coolcoolsowmi@gmail.com, 9642179323

Abstract
Non ossifying fibroma is a fibro-histiocytic developmental lesion involving growing portion of long tubular bones. It commonly occurs in 1st and 2nd decades of life and undergoes spontaneous resolution with skeletal maturity. Majority of lesions are asymptomatic. X-ray shows eccentric lytic lesion with distinct sclerotic margins in cortex. Cytologically spindle shaped stromal cells with elongated fusiform nuclei admixed with variable number of osteoclast like giant cells and phagocytic cells are seen. Cytological findings closely resemble Giant Cell tumor of bone and hence they are difficult to separate on cytology alone. 23yr old woman presented with pain and swelling in left wrist of 6months duration. Pain was intermittent and progressively increased in intensity. X-ray showed lytic expansile lesion – distal end radius with breach in cortex. FNAC showed cellular smears comprising sheets of mononuclear spindle shaped cells with variable number of osteoclast like giant cells. These X-ray and cytology findings favoured Giant cell tumor of bone. Frozen sections showed sheets of spindle shaped mononuclear cells arranged in storiform pattern, sparsely scattered osteoclast like giant cells, focal collections of xanthoma cells and scattered inflammatory cells. Diagnosis of Non ossifying fibroma was given, later confirmed on histopathology.

Keywords: Non ossifying fibroma, Giant cell tumor, Cytology.
Abstract No: PP 07
Title: Mucinous Carcinoma Liver- Primary? or Metastatic?
Authors: Dr Chandrahas, Dr Parinitha SS, Dr. Col. U. S. Dinesh
Designation of Presenting Author: Postgraduate
Institution: SDM College of Medical Sciences and Hospital, Sattur, Dharwad
Email Id & Mobile No of presenting Author: chandrhas43@gmail.com, 9964413160
Abstract
Mucinous neoplasm of liver has been a controversial entity, in particular regarding differentiation from primary hepatic mucinous neoplasms to those of secondaries. Secondaries are most often of colorectal origin, however rarely primary can be from other sites like ovary, lung and breast. A 63 year female, presented with pain abdomen. MDCT abdomen revealed space occupying lesion(10.4x8.5x8 cm) in liver. USG guided FNAC of liver smears showed highly cellular smears with single population of cells. Cells had eccentric pleomorphic nuclei, conspicuous nucleoli and moderate cytoplasm. Occasional acinar pattern seen. Background shows mucinous material. No hepatocytes or necrosis seen. Past history revealed left mastectomy for malignancy and reported as invasive mucinous carcinoma breast (6 years back). The final diagnosis of metastatic mucinous carcinoma breast was rendered after reviewing mastectomy slides. Mucinous carcinoma in liver can be primary or metastatic. Primary mucinous neoplasms are cyst-forming, composed of columnar, mucin-producing epithelium, and associated with ovarian-type stroma. On FNAC these should be differentiated from metastatic mucinous tumours. Metastatic mucinous tumours are most common from colorectal origin. Pure mucinous carcinoma breast has a favourable prognosis but rarely these can metastasize. Cytopathologists should consider both primary and secondary tumours when they encounter mucinous carcinoma in liver.
Key Words: Mucinous carcinoma, Liver, Secondaries

Abstract No: PP 08
Title: Malignant Oncocytoma of Parotid Gland. A Rare Malignancy
Authors: Dr Nimisha Gupta, Dr. Shashikala, Dr Niranjan J, Dr Prathima S, Dr Shivarudrappa AS
Designation of Presenting Author: Postgraduate
Institution: Vydehi Institute of Medical Sciences and Research Centre, Bangalore
Email Id & Mobile No of presenting Author: moment31289@gmail.com, 8171105434
Abstract
Oncocytic carcinoma is an extremely rare malignancy in salivary glands accounting less than 1% of all epithelial salivary gland tumors. A 49 years old male presented to our tertiary care institute with swelling over left parotid region since 2 years. On local examination, swelling was 5x4cms in size, firm, non tender and immobile along with facial nerve palsy. MRI brain revealed ill-defined stellate fibrotic enhancing lesion in left parotid region infiltrating the surrounding structures. FNAC smears of left parotid swelling showed cohesive, multi-layered aggregates of oncocytes suggestive of Oncocytic lesion. Patient underwent left radical parotidectomy with marginal mandibulectomy. Histopathological evaluation revealed Oncocytic carcinoma with lymphovascular and perineural invasion with ipsilateral cervical lymph node metastasis. Oncocytic carcinoma is an unusual proliferation of cytologically malignant oncocytes. Its malignant nature is characterised by abnormal morphological features, infiltrative growth, lymph node metastasis, lymphovascular and perineural invasion. Oncocytic lesions of salivary gland can pose a diagnostic dilemma in cytology hence a histopathological examination often remains the cornerstone of diagnosis. The presence of distant, rather than local lymph node metastasis is the most important prognostic indicator and hence demand long term follow up after therapy. This case is presented due to its rarity.
Key Words: Oncocytic Carcinoma, Cervical Lymph Node
Abstract No: PP 09
Title: A Consortium of Rare Fungi in Sputum Cytology
Authors: Dr Deepika, Dr Sathyavathi.R.Alva
Designation of Presenting Author: Postgraduate
Institution: KVG Medical College, Sullia D.K
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Abstract
Isolation of Aspergillus species from respiratory cultures is usually seen in immunocompromised patients. Most are attributed to Aspergillus fumigatus, followed by Aspergillus flavus and Aspergillus tereus. We report a case of sputum smear showing dysplasia along with Aspergillus species in a young man with no comorbidities. A 26-year-old patient came to the medicine OPD with complaints of on and off fever and cough since 3 months. Sputum examination showed superficial and intermediate squamous cells. Some of the squamous cells showed nucleomegaly, increase N:C ratio and scant cytoplasm. However, a large number of hyphae with fruiting bodies of Aspergillus species were observed in the smears. Based on the clinical picture, laboratory investigations and examination of sputum smear it was concluded that the presence of these species was due to a true infection. Anti fungal treatment was initiated and a clinical follow-up with repeat sputum smear after 1 month showed a reduction in the infection. Whenever fungi, especially rare ones, are encountered in the sputum smear, careful examination of the smear is required to determine whether it is a contaminant or true infection. In our case the presence of Aspergillus species was proved to be due to a true infection.
Key words: Fungi, Aspergillus

Abstract No: PP 10
Title: Angiolymphoid Hyperplasia with Eosinophilia behind Right Ear. A Rare Case Report
Authors: Dr Amrita Dhakal Sharma, Dr Navya B N, Dr Sathyavathi R Alva
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Abstract
Angiolymphoid hyperplasia with eosinophilia (ALHE) is an uncommon, vasoproliferative benign condition. It preferably affects women between 20 - 40 years and manifests as isolated or grouped papules, plaques, or nodules in the skin of the head and neck. It is locally proliferating lesion composed of channels of small blood vessels surrounded by lymphocytes and eosinophils. ALHE is often mistaken for Kimura’s disease. A 40-year female presented to surgery OPD with 5*2 cm solitary mass behind right ear. It had slowly enlarged over 4 years. There was no obvious ulceration, crusting, preceding trauma, or insect bite. The mass was non-tender, fixed, ovoid possessing a solid consistency. Regional lymph nodes were not enlarged and peripheral eosinophil count was not raised. FNAC showed spindle shaped, polygonal cells with vesicular nuclei and eosinophilic cytoplasm in a background of eosinophils and lymphocytes. These features were consistent with proliferation of epitheloid endothelial cells and a diagnosis of ALHE was established. Diagnosis was confirmed histologically after excision. In the present case, clinical and cytological diagnosis was challenging. Despite its benign nature, ALHE causes a therapeutic dilemma. FNAC being minimally invasive, its accuracy in this case approached that of histopathology in providing unequivocal diagnosis.
Keywords: Vasoproliferative, Eosinophilia.
**Abstract No: PP 11**

**Title:** Anaplastic carcinoma of thyroid.

**Authors:** Dr Shaista Choudhary, Dr Jaydeep G L

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**Abstract**

Anaplastic carcinoma is a rare condition among thyroid carcinomas, and Anaplastic carcinoma of the thyroid is one of the most malignant tumors and survival for longer than three years after diagnosis is exceptional. Multinucleated giant cells of osteoclastlike appearances are seen in some of the anaplastic carcinoma, but only three cases in which the diagnosis was made by fine needle aspiration (FNA) cytology are reported in the international literature. We report a case of a 46-year old female who presented as a swelling in the middle of the neck, on examination: stony hard, hemorrhagic aspirate noted. The smears revealed two cell populations; multinucleated giant cells and large polygonal or spindle shaped malignant cells. Anaplastic, or undifferentiated, thyroid carcinoma (ATC) is a highly aggressive disease with less than 1-year survival in nearly all patients with this disease. Because of its aggressive nature, ATC is frequently unresectable. Rapid and accurate pretreatment diagnosis is required to attempt local-regional control. Fine-needle aspiration (FNA) and core-needle biopsy (CNB) are the most widely used initial means of obtaining a tissue diagnosis of this entity, and these specimens are often the only tissue procured before definitive therapy. Although the literature on cytologic diagnosis of ATC is limited, the performance characteristics of FNA appear to be good, with high sensitivity and specificity.

**Key Words:** Anaplastic Carcinoma, FNA

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**Abstract No: PP 12**

**Title:** Malt Lymphoma in 3rd Part of Duodenum

**Authors:** Dr Muneerah Saeed, Dr Padma Priya J, Dr Kanthilatha Pai

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**Abstract**

Primary duodenal mucosa associated lymphoid tissue (MALT) lymphoma is very rare and constitute the least percentage of gastrointestinal neoplasm. It can present with abdominal pain, vomiting, weight loss and altered bowel habits. On histopathological examination, dense, monotonous population of centrocyte-like cells, often with residual germinal centers are seen which may have plasmacytoid differentiation. A female patient aged 42 years presented with colicky pain in upper abdomen since a month associated with loss of appetite and weight. UGI scopy revealed a plaque like lesion with ulceration in D3 and GIST was suspected. FNA of the patient showed atypical cells many with uniform round nuclei, few showing cleaving of nuclei in a background of extensive necrosis and hemorrhage raising the suspicion of lymphoma. The diagnosis was confirmed based on histopathological findings in conjunction with IHC. MALT lymphoma of duodenum is a very rare tumor. We compare the FN, frozen section with histopathological and IHC features, emphasizing that lymphomas should be kept in mind while diagnosing duodenal lesions in fine needle aspiration cytology.

**Key Words:** MALT lymphoma, Duodenum, FNAC
Abstract No: PP 13
Title: Pap smear abnormalities of various age groups in a tertiary health care center.
Authors: Dr Rajini T, Dr. Subashish Das, Dr Sheela.
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Abstract
To study the age and pattern of Pap smear results of patients undergoing cervical cancer screening. The Pap smear results of all women undergoing cervical cancer screening at R L Jalappa hospital and Research Centre between January 2016 and June 2017 were retrieved from the laboratory records of hospital. Ethical approval was obtained to conduct the study. A total of 1596 Pap smear results were retrieved and analyzed with SPSS version 22. 40 (2.5%) reports were excluded from analysis. The mean age of the women was 45.77 ± 10 years and the mode was 50 years. Normal Pap smear result was reported in 1092 (68.4%) women. Only 11 women had more than one Pap smear done. The most common abnormality was inflammatory smear result reported in 372 (23.3%) women. ASCUS, LSIL, ASC-H, AGUS and HSIL were reported in 10 (0.6%), 54 (3.4%), 8 (0.5%), 2 (0.13%) and 18 (1.2%) women, respectively. Squamous cell carcinoma was reported in 2 (0.13%) women. The incidence of abnormal Pap smears was moderately high in our study and women start cervical cancer screening late in their reproductive life. This could be a contributing factor to the high burden of cervical cancer in developing countries.
Key Words: Pap Smears, Squamous cell carcinoma, Abnormal

Abstract No: PP 14
Title: Role of Papanicolaou Smear in the Diagnosis of Pathological Flora in Reproductive Age Group Patients in Tertiary Care Centre
Authors: Dr Preeti Ashok Utnal, Dr Supreetha MS, Dr Hemalatha A
Designation of Presenting Author: Postgraduate
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Abstract
The infections of female genital tract, especially the cervix are more common in reproductive age group women and pose a diagnostic challenge. Vaginal infections can lead to cytoplasmic and nuclear abnormalities in the epithelial cells. Additionally, these infections could augur an inflammatory response of varying nature. The most common flora include Candida albicans, Gardnerella vaginalis, Trichomonas vaginalis, Human papilloma virus (HPV), Human Herpes Virus (HHV) and Actinomyces sp. This study seeks to measure the role of Papanicolaou smear in detection of pathologic flora: Candida albicans, Gardnerella vaginalis (BV), Trichomonas vaginalis(TV), Human papilloma virus(HPV), Human Herpes Virus (HHV) and Actinomyces; in reproductive age group women. A retrospective study of cervical smears by Papanicolaou method, over 1 year period was carried out in tertiary care center including total number of patients. Of the total 117 samples examined Gardnerella was most frequently detected (71.8%) followed by Candida (16.3%) , Trichomonas (8.5%) and mixed infection of TV and BV (1.7%) and TV with Leptothrix (1.7%). The Papanicolaou test for examining cervical smear has definite uses in detecting vaginal microorganisms.
Key Words: PAP Smear, Cervical cytology, Candida
Abstract No: PP 15
Title: Cytological evaluation of Salivary gland lesions
Authors: Dr Harsha S, Dr Patil S B, Dr Rajashekar K S
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Abstract
The challenges posed by the inherent complexity of salivary gland FNA are further complicated by the lack of a standardized reporting system. The Milan System for Reporting Salivary Gland Cytopathology (MSRSGC) provides a logical, pragmatic and flexible reporting terminology, emphasizing on risk stratification and providing a Risk of Malignancy (ROM) for each ascending risk category. A computerized search for salivary gland FNAs performed from June 2016 to December 2017 in Department of Pathology, JJM Medical College, yielded 53 cases. No case was encountered in the “non-diagnostic” category (0). 20 cases (37.8%) belonged to the “non-neoplastic” category. No case was present in “atypia of undetermined significance” i.e. AUS category (0). “Neoplastic: Benign” category had 21 cases (39.6%). No case was placed in “Neoplastic: salivary gland neoplasm of uncertain malignant potential or SUMP (0) and “Suspicious for malignancy (0) categories. Malignant category had 12 cases of which 7 were low and 5 high grades. MSRSGC is an evidence-based system correlating diagnostic categories with ROM and clinical management strategies thus allowing the cytopathologist and clinician to communicate effectively resulting in improved patient care.
Key Words: Salivary gland FNA, Milan System, Risk of Malignancy

Abstract No: PP 16
Title: Extra Skeletal Chondrosarcoma – A Case Report with Literature Review
Authors: Dr. Renuka B.N
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Abstract:
Extra Skeletal Myxoid Chondrosarcoma(ESMC) is a rare soft tissue sarcoma most often seen in males. It is seen to arise from lower extremities, buttocks etc. Its histopathological and cytogenic features have been thoroughly examined, however limited reports on the description of cytological findings are present in the literature. We report a case of 70yrs old male patient with soft tissue swelling on the back. FNAC was done and diagnosis of Myxoid pleomorphic sarcoma favouring EMC was made. Subsequent excision of the lesion was done with uneventful post operative course. Histopathology & Immuno-histochemistry confirmed it to be ESMC. Patient refused for adjuvant chemotherapy and was under follow up.
Key Words: Extra skeletal Myxoid Chondrosarcoma, pleomorphic myxoid sarcoma, fine needle aspiration cytology.
Abstract No: PP 18
Title: Extraneural metastases of ependymoma – a rare occurrence
Authors: Dr Sulakshana MS, Dr Nandini N Inamdar, Dr M S N Prasad, Dr B S Srinath
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Abstract
Extraneural metastases of malignant gliomas are rare. Despite the theory of the ‘blood brain’ barrier that sets apart the central nervous system from the body, extracranial metastasis can occur in the lung, lymph nodes, bone, liver and pleura. We present a case of Anaplastic ependymoma with extraneural metastases to the vertebral bodies and sacrum. A 21 year old female was diagnosed with left cerebello-pontine angle anaplastic ependymoma. She was treated with surgery and radiotherapy. Routine follow up revealed T2 hyperintense and T1 hypointense lesions in the entire spine on MRI. MRI brain showed minimal interval reduction of mass located in the left cerebello-pontine cistern with stable mass in the left foramen of Luschka, and patchy abnormal marrow signal changes involving most of the vertebral bodies-probably metastases. Fine needle aspiration cytology and biopsy from the right paramedian sacral bone were done, which were positive for malignancy, consistent with metastases. The diagnosis was confirmed with immunohistochemical studies. Following this, she was given 6 cycles of chemotherapy – Bevacizumab+Cisplatin regimen (biweekly). Patient showed partial response and is on regular follow up. This case highlights the hematogenous spread of intracranial glioma when compared to the conventional ‘drop metastases’ to the spine via the cerebrospinal fluid.

Keywords: Extraneural Metastasis, Malignant Gliomas
**Abstract No: PP 19**

**Title:** Cellular cannibalism in malignant cytology smear - A Case Report

**Authors:** Dr R Yashaswini, Dr Suresh T N, Dr Manjula K, Dr Azeem Mohiyuddin S M

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**Abstract:**

Cellular cannibalism is defined as the ability of a cell to engulf another living cell leading eventually to the death of the internalized cell. It is considered as a sort of “feeding” activity aimed at sustaining survival and progression of malignant tumor cells in an unfavorable microenvironment. The phenomenon of cell cannibalism has been observed in several tumors such as lung carcinoma, renal carcinoma, bladder carcinoma, breast carcinoma, endometrial stromal sarcoma, gastric adenocarcinomas, malignant melanoma, and lymphomas. It is especially valuable as it eventually helps in assessing tumor behavior. A 65 yr male patient presented with right side swelling along with hoarseness of voice since 6 months. USG neck revealed matted level IV lymphnode- Malignant etiology and CT head and neck suggest superior mediastinal mass – Possibility of Bronchogenic carcinoma. On FNAC of right level IV LN show poorly differentiated tumor cell engulfing surrounding tumor cells and inflammatory cells- feature of cannibalism. Cellular cannibalism an easily identifiable morphological features of malignant lesion under light microscopy without the use of any advanced and expensive molecular techniques. Hence, aggressiveness of the neoplasm can be assessed on a routine basis.

**Keywords:** Cannibalism, FNAC.

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**Abstract No: PP 20**

**Title:** Evaluation of Quality Indicators in Cytology section in CDLS, R L Jalappa Hospital, Kolar

**Authors:** Dr Geetha S, Dr Hemalatha A, Dr Kalyani R

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**Abstract:**

Quality indicators in Laboratory services provide useful tool for assurance of quality reports and opportunity for continuous improvement of Laboratory services. The goal of this study was to review the quality indicators recorded in CDLS, RLJH and RC in order to improve the performance of cytology section of CDLS.

The study included the evaluation of various quality indicators in pre examination, examination and post examination phase in cytology section over a period of 6 months from August 2017 to January 2018. Staff posted in cytology section evaluated various quality indicators on daily, weekly and monthly basis regularly. The data is collected from cytology section and entered in SPSS Software and descriptive analysis was done. Various parameters in pre examination phase considered are test request form not received, incomplete test request form, smear not labelled / wrongly labelled, billing errors and repeat and redos. Parameters in examination phase are loss of fluid container/slide, incorrect numbering of container and stain issues. Parameters in post examination phase are monitoring of turnaround time, informing critical values, reviews of reports, typographical errors, percentage of NILM, ASC-US, ASC-H, ASC-US to SIL ratio and Cyto Histological correlation. Improper filling of requisition forms (0.6%) was the most common error noted in cytology section during evaluation of quality indicators. Working constantly to improve these quality indicators in cytology section by taking timely corrective measures definitively help to improve the quality of laboratory services and patient care.

**Key Words:** Cytology, Quality Indicators.
**Abstract No: PP 22**

**Title:** Myoepithelioma of minor salivary gland lesion – A Cytodiagnostic dilemma

**Authors:** Dr Supreetha MS, Dr CSBR Prasad

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**Abstract**

Myoepitheliomas are rare benign tumors of salivary glands, accounting for only 1% - 1.5% of all salivary gland neoplasms. The most common site of occurrence is parotid gland (50%) followed by sublingual gland (33%), submandibular gland (13%) and very rarely in oral cavity (1.5%). A 45-year-old lady presented with complaint of swelling hard palate region for past 2 years. On examination, swelling was 3 cms in diameter and firm in consistency. Fine Needle Aspiration was done and the smears showed round to ovoid cells arranged in clusters, trabeculae and groups as well as dispersed singly. These cells had round to ovoid nuclei with bland granular chromatin. Areas of chondromyxoid stromal fragments also present. A cytological diagnosis of a benign neoplasm of salivary gland origin possibly pleomorphic adenoma was given. Grossly the resected lesion showed a well circumscribed grey white to grey brown area measuring 3 cms in diameter. The histopathological examination showed features of Myoepithelioma of minor salivary gland lesion. Myoepithelioma of parotid gland is rare in daily medical practice. To avoid unnecessary extensive surgical resection, an accurate diagnosis is of utmost importance of myoepithelioma. The prognosis for benign myoepithelioma is quite well, but patients should undergo regular follow up examinations to rule out local recurrence.

**Key Words:** Myoepithelioma, Pleomorphic adenoma, cytology

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**Abstract No: PP 21**

**Title:** A Pilot Study of Outlook towards PAP smear among female Laboratory Technicians working in Laboratories attached to a tertiary care hospital

**Authors:** Dr Hemalatha A, Dr Kalyani R

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**Abstract**

Cervical cancer is one of the leading cause of cancer deaths in our country. Numerous screening programs such has pap smear test, screening for human papilloma virus has reduced the cancer burden in western countries, though same cannot be spoken about in India. The onus of reducing the burden of the disease depends on health care providers such as doctors, nurses, technicians and others. Though laboratory workers are backbone of any laboratory, no studies have been documented regarding the same. This study will target female laboratory technicians working in Central Diagnostic Laboratory Services of R L Jalappa Hospital and Research Centre, Kolar with a pre-formatted questionnaire. A total of twenty four female technicians working in our laboratory is included in the study. Participants were assured of confidentiality and they were given a choice to refuse to answer as the participation was volunteer. They were given full explanation regarding the project – the purpose and methodology. No personal identifying information was collected in the questionnaire. The questionnaire was designed based on the literature review and consisted questions on socio-demographic characteristics, knowledge, attitude and practice of Pap smear test. Feedback was taken from the participants on the questionnaire, regarding any comments and suggestions.

**Key Words:** PAP smear, Technicians, KAP
Abstracts - Papers
Abstract No: OP 01

Title: A study of morphological markers of chromosomal instability in a spectrum of cervical epithelial lesions and its correlation with 2014 Bethesda system

Authors: Dr. Vedavathi B.L., Dr. Shivkumar S.

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Abstract

Background & Aims: Chromosomes or chromosome segments that fail to incorporated into nuclei during cell division configure as micronuclei (MN), nuclear budding (NB) and chromatin bridges (CB). The frequency of these markers are increased in carcinogen-exposed tissues long before any clinical symptoms are evident. To study and compare the scoring of morphologic markers of chromosomal instability in a spectrum of non-neoplastic, intraepithelial lesions and invasive cancer of the cervix.

Materials & Methods: Retrospective study conducted in the department of pathology, MIMS, Mandya from January 2016 to November 2017. All conventional pap smears with epithelial cell abnormalities and equal number of age matched pap smears without epithelial cell abnormalities received during study period were interpreted according to 2014 Bethesda system and examined for MN, NB and CB.

Results: Out of 150 conventional pap smears studied 53 smears showed neoplastic changes and 75 were non-neoplastic. Carcinoma in situ (LSIL and HSIL) lesion seen in 42 smears and 11 smears showed invasive carcinoma. The mean MN score and NB score showed increasing trend towards malignancy with significant p value <0.05. The MN score and NB score is significantly high in invasive carcinoma compared to carcinoma in situ. CB was observed in one case each of LSIL, HSIL and IC.

Conclusion: This is a simple, reliable, reproducible and cost-effective test and can serve as an effective biomarker in conjunction with the conventional cervical Pap screening early diagnosis of CIN and cervical cancer.

Key Words: Pap Smear, Biomarker, Micronuclei, Nuclear Budding
Title: Cytological pattern analysis of cervical PAP smears in perimenopausal and postmenopausal age group in a Tertiary care hospital.

Authors: Dr Aysha Femy Dr Anuradha C.K Rao

Designation of Presenting Author: Post graduate.

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Abstract:

Background & Aims: PAP smear is a routinely used cytological screening test to detect precancerous lesions of the cervix besides ovarian hormonal activity assessment. Since postmenopausal cervical epithelium is responsive to estrogen, a pattern analysis of the cervical cytology can help ascertain the estrogen activity. Pap smear hence serves dual function of evaluation of ovarian function and early preneoplastic cervical changes.

Materials and Methods: A retrospective study was conducted in the department of Pathology, YMCH. 83 Pap smears from the perimenopausal and postmenopausal age group between June - December 2017 were included. Cytological pattern, inflammatory changes, presence of organisms, multinucleate giant cells, features of endocervicitis, background and cellular abnormalities were analysed.

Results: Of the 83 slides reviewed 52 perimenopausal, 31 postmenopausal women smears were assessed, with 23% and 6% respectively showing atrophic cytology. Infective changes were noted in 39% of perimenopausal and 22% postmenopausal women. The prevalence of epithelial cell abnormality was found to be more in the postmenopausal age group (4.9%).

Conclusion: Routine Pap tests in the postmenopausal and perimenopausal age groups can help early identification of high estrogen levels and hence hormone related preneoplastic lesions of the female genital tract. This can further aid in early and effective treatment, besides prevention of progression to malignancy.

Key Words: Pap Smears, Perimenopausal, Postmenopausal
Abstract No: OP 03

Title: A study of morphological markers of chromosomal instability in a spectrum of cervical epithelial lesions and its correlation with 2014 Bethesda system

Authors: Dr. Vedavathi B.L., Dr. Shivkumar S.

Designation of Presenting Author: Post graduate student

Institution: Mandya Institute of Medical Sciences, Mandya

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Abstract

Background & Aims: Chromosomes or chromosome segments that fail to incorporated into nuclei during cell division configure as micronuclei (MN), nuclear budding (NB) and chromatin bridges (CB). The frequency of these markers are increased in carcinogen-exposed tissues long before any clinical symptoms are evident. To study and compare the scoring of morphologic markers of chromosomal instability in a spectrum of non-neoplastic, intraepithelial lesions and invasive cancer of the cervix.

Materials & Methods: Retrospective study conducted in the department of pathology, MIMS, Mandya from January 2016 to November 2017. All conventional pap smears with epithelial cell abnormalities and equal number of age matched pap smears without epithelial cell abnormalities received during study period were interpreted according to 2014 Bethesda system and examined for MN, NB and CB.

Results: Out of 150 conventional pap smears studied 53 smears showed neoplastic changes and 75 were non-neoplastic. Carcinoma in situ (LSIL and HSIL) lesion seen in 42 smears and 11 smears showed invasive carcinoma. The mean MN score and NB score showed increasing trend towards malignancy with significant p value <0.05. The MN score and NB score is significantly high in invasive carcinoma compared to carcinoma in situ. CB was observed in one case each of LSIL, HSIL and IC.

Conclusion: This is a simple, reliable, reproducible and cost-effective test and can serve as an effective biomarker in conjunction with the conventional cervical Pap screening early diagnosis of CIN and cervical cancer.

Key Words: Pap Smear, Biomarker, Micronuclei, Nuclear Budding
Title: A study of morphological markers of chromosomal instability in a spectrum of cervical epithelial lesions and its correlation with 2014 Bethesda system

Authors: Dr. Vedavathi B.L., Dr. Shivkumar S.

Designation of Presenting Author: Post graduate student

Institution: Mandya Institute of Medical Sciences, Mandya

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Abstract

Background & Aims: Chromosomes or chromosome segments that fail to incorporated into nuclei during cell division configure as micronuclei (MN), nuclear budding (NB) and chromatin bridges (CB). The frequency of these markers are increased in carcinogen-exposed tissues long before any clinical symptoms are evident. To study and compare the scoring of morphologic markers of chromosomal instability in a spectrum of non-neoplastic, intraepithelial lesions and invasive cancer of the cervix.

Materials & Methods: Retrospective study conducted in the department of pathology, MIMS, Mandya from January 2016 to November 2017. All conventional pap smears with epithelial cell abnormalities and equal number of age matched pap smears without epithelial cell abnormalities received during study period were interpreted according to 2014 Bethesda system and examined for MN, NB and CB.

Results: Out of 150 conventional pap smears studied 53 smears showed neoplastic changes and 75 were non-neoplastic. Carcinoma in situ (LSIL and HSIL) lesion seen in 42 smears and 11 smears showed invasive carcinoma. The mean MN score and NB score showed increasing trend towards malignancy with significant p value <0.05. The MN score and NB score is significantly high in invasive carcinoma compared to carcinoma in situ. CB was observed in one case each of LSIL, HSIL and IC.

Conclusion: This is a simple, reliable, reproducible and cost-effective test and can serve as an effective biomarker in conjunction with the conventional cervical Pap screening early diagnosis of CIN and cervical cancer.

Key Words: Pap Smear, Biomarker, Micronuclei, Nuclear Budding
Abstract No: OP 05

Title: Utility of fine needle aspiration cytology in diagnosing soft tissue tumors - A single institutional experience

Authors: Dr Ayesha, Dr Srinivasa Murthy V, Dr Satish Belagatti

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Institution: ESI PGIMSR, Rajajinagar, Bangalore

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Abstract

Background & Aims: Soft tissue tumours are a heterogeneous group of lesions arising from non-epithelial extraskeletal tissue of the body. Benign tumors out number malignant tumors by being 10 times more commoner in a hospital population. The use of fine needle aspiration cytology (FNAC) in the evaluation of soft tissue tumour is debatable because of their extremely varied morphology. Aim is to evaluate role of FNAC as a routine procedure in diagnosing soft tissue tumors and to evaluate the diagnostic accuracy and correlation of cytomorphological features with histomorphology.

Materials & Methods: This is a retrospective study of cytological analysis of FNAC performed on soft tissue tumors reporting to ESICMC, Bangalore over a period of one year. Histomorphological features of the biopsies performed were evaluated and correlated with FNA findings. Relevant clinical details were obtained from the patients records

Results: Out of 2370 fnac cases, 450 cases of soft tissue tumors studied. Among that 438(97.3%) cases were benign, 12(2.6%) were malignant. Among benign tumors Lipoma constituted the major group (83%), and soft tissue sarcoma, nerve sheath tumor (33%) in malignant cases. Cytohistomorphological correlation was 100% concordant in malignant cases and 1 case which were reported as benign turned out to be malignant on biopsy. The sensitivity and specificity is 87.5% and 100%. The positive predictive value is 100% and negative predictive value is 99%.

Conclusion: FNAC is a safe, cost effective diagnostic procedure which provides fairly accurate correlation with the histomorphology in soft tissue tumors.

Keywords: FNAC, Soft tissue tumor, Benign, Malignant
Abstract No: OP 06

Title: Pap smear findings in women presenting with vaginal discharge to gynecological OPD in a rural hospital

Authors: Dr Shruthi H, Dr Shruthi N S, Dr Roopa A N, Dr Raja Parthiban S R

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Background & Aims: Vaginal discharge is the most common complaint of reproductive and post-menopausal women. It may be due to a variety of causes like cervicitis, polyps, carcinoma of the cervix and infections like trichomonas, candida, bacterial vaginosis. Aim is to identify and categorize patients with vaginal discharge based on etiology and to determine the cytological changes associated with the identified etiology.

Materials and methods: 122 pap smears of women with vaginal discharge over a 1-year period were studied. Relevant clinical data were obtained from hospital case files.

Results: Age of the patients ranged from 23 to 70 years. Majority were in reproductive age group (86%). Amongst the 122 cases, 116(95%) were inflammatory smears with three cases of HSIL(2.45%), two cases of ASCUS (1.6%) and one case of squamous cell carcinoma (0.8%). Among the inflammatory smears, 25(21.5%) cases of bacterial vaginosis, 16(13.7%) cases of Candida infection, 14(12%) cases of Trichomonas Vaginalis and 4(3.4%) cases of atrophic vaginitis were noted. Various cytological changes like nucleomegaly, cytolysis, cytoplasmic eosinophilia and perinuclear halo that were associated with etiology or prompted a diagnosis were identified.

Conclusion: Illiteracy, poverty and lack of awareness are common in rural areas that lead to delayed diagnosis and morbidity. A simple test like a PAP smear can assist in early diagnosis and lead to prompt intervention. Health awareness and screening programmes are needed to utilize this golden test.

Key Words: Pap smear, Vaginal discharge, Cytology
Title: Use of p16\textsuperscript{Ink4a} immunomarker on cell blocks in early detection of cervical precancerous and cancerous lesions

Authors: Dr P Ashoka Varshini, Dr. Nandini Manoli, Dr Nandeesh

Designation of Presenting Author: Postgraduate

Institution: JSS Medical College, Mysuru

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Abstract

	extbf{Background & Aims:} Cervical cancer represents a real public health problem and ranks as the 2\textsuperscript{nd} most common cause of female cancer in India. Pap smear has played a key role in the reduction of deaths due to carcinoma cervix but its limitations have affected the sensitivity and specificity of the test. The advent of fluid based collection of gynaecologic cytological specimens has provided the possibility of cell block preparation. The specificity without decreasing the sensitivity of cervical cytology interpretations is highly desirable which may be optimised by introducing p16 immunomarker on cell blocks as an ancillary test. Aim is to use p16 biomarker in cervical biopsies that could help in the early diagnosis of malignant lesions and support adequate treatment.

	extbf{Materials & Methods:} The present study is a two year prospective study where cervical samples for the cell block are collected from 75 patients in the age group of 20-70 yrs with gynaecological complaints of abnormal p/v bleeding, abnormal p/v discharge and post coital bleeding. p16 immunomarker is used on the cell blocks and correlation with histopathology done wherever possible.

	extbf{Discussion & Conclusion:} Cell block sections with p16 immunocytochemistry result in enhanced specimen quality, accurate diagnosis and diminished false negative cases. It improves cervical precancer diagnosis as well as reduce falsepositive interpretations, thus decreasing unnecessary surgical procedures.

	extbf{Key Words:} Cervical precancerous lesions, pap smears, cell block, p16 immunomarker.
Title: To tweet or not to tweet? Role of #SoMe (Social Media) and trends in e-learning of Cytopathology

Authors: Dr Aditya Agnihotri, Dr U. S. Dinesh, Dr Hephzibah Rani

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Background & Objectives: Social media is an influential tool that has the power to transform cytopathology. Smartphones can now take high resolution microscopic photographs and easily transmit them worldwide via Twitter, Facebook, and other social media, allowing cytopathologists to share educational pearls and discuss difficult cases on a global scale like never before. As a result this study is being undertaken to highlight the role of #SoMe in Cytopathology education and to check awareness of Do’s and Don’ts in cytopathology.

To highlight the demography of #SoMe users among pathologists, To understand the attitudes and practices of pathologists regarding social media use.

Materials and Methods: A questionnaire with 25 questions requiring <5 mins to fill was released online on various social media platforms on 14/02/18 for pathologists to submit. The online survey will be closed on 25/02/18. All the submissions received will be analyzed and various statistical tests performed using SPSS 22 software. Recent Cytopathology trends on social media with case scenarios will be presented.

Results: The survey is still online.

Conclusion: Social Media is key to a bright future for our speciality, a strong unified global community of cytopathologists all working together for education, patient advocacy, and outstanding patient care. Social media can allow us to build that community, strengthen its bonds, and harness its power like never before in history.

Key Words: Social Media, Cytopathologists
Abstract

Background and Objectives: Aim of the study is to compare the cytomorphological features of various primary and metastatic tumors of liver in VIMS, Ballari.

Materials and Methods: Ultrasound guided fine needle aspiration done for 44 cases with evidence of liver lesions. Cytomorphological diagnosis were correlated with clinical and radiological findings.

Results: Cytological diagnosis is made in 34 patients and it was found that primary tumors of liver are 28 (83%) and secondary tumors of liver 6 (17%). Primary liver tumors are more common than metastatic tumors of liver.

Conclusion: Primary malignancy of liver were found to be more than secondary metastatic tumors in our institution. Primary tumors are hepatocellular carcinoma (26) and hepatoblastoma (2). Metastatic tumors are predominantly adenocarcinoma (from breast, thyroid, ovary and pancreas) and 2 case of squamous cell carcinoma from esophagus.

Key Words: Hepatocellular carcinoma, hepatoblastoma, squamous cell carcinoma.
Abstract No: OP 10

Title: Role of fine needle aspiration cytology in salivary gland lesions; an institutional study.

Authors: Dr Preetika Sinha, Dr. Vani BR, Dr Srinivasamurthy V

Designation of Presenting Author: Postgraduate

Institution: ESI PGIMSR, Rajajinagar Bangalore

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Abstract

Background & Aims: Fine-needle aspiration cytology is a simple, rapid, inexpensive, well tolerated and a minimally invasive diagnostic procedure popularly used for evaluation of salivary gland lesions. Aim is cytological study of salivary gland lesions and it’s categorization into neoplastic and non neoplastic conditions & to correlate with histopathology in order to assess the sensitivity, specificity and diagnostic accuracy of FNAC.

Materials and Methods: This retrospective study included all salivary gland FNAs performed during January 2016 to December 2017. Clinical details were collected. Cytology slides retrieved from the archives, were studied and correlated with histopathology wherever available.

Results: Of 4365 total FNAs performed, salivary gland lesions constituted 80 cases (1.83%). The age of patients ranged from 4 to 73 years Male-to-female ratio was 1.1:1. Non neoplastic and neoplastic lesions constituted 43 cases (53.8%) and 37 cases (46.2%) respectively. 70% cases involved parotid glands. Pleomorphic adenoma and mucoepidermoid carcinoma were the most frequent benign and malignant neoplasm respectively. Among 80 patients, 47 underwent surgical intervention and had histopathological follow up.

Conclusion: The overall sensitivity, specificity of FNAC in the diagnosis of salivary gland lesions were 91.8 and 93.2 respectively. Fine needle aspiration cytology can differentiate between inflammatory and neoplastic conditions of the salivary gland, hence provides efficient information for further therapeutic planning.

Keywords: Fine needle aspiration, salivary gland, specificity, sensitivity.
Abstract No: OP 11

Title: Role of Radiological-Guided FNAC in Intra-Abdominal lesions

Authors: Dr Ranjitha B, Dr Srinivasamurthy V, Dr Deepak Kumar B.

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Abstract

Background & Aims: Diagnosis of intra-abdominal lesions is mysterious many a times, especially deep seated lesions. Confirmed diagnosis is essential for proper management. FNAC with radiological assistance helps to approach the lesion and obtain diagnostic material. Aim of the study is to study the utility of radiological-guided FNAC in intra-abdominal lesions. And organ wise distribution and categorization as non-neoplastic, benign and malignant lesions based on cytomorphological features.

Material and Methods: A Total of 82 intra-abdominal lesions detected clinically or radiologically from January 2015 to December 2017 were included in the study. CT or USG guided FNAC was performed. H&E and Leishman stained slides were retrieved from archives of pathology department. Histopathological follow up was done, wherever available.

Results: The mean age was 52.5 years, with male to female ratio being 2:1. The diagnostic yield in CT-guided FNAC was 96.8% and USG guided FNAC was 94.2%. Out of 82 cases, 4 were unsatisfactory, 12 were non-neoplastic, 8 were benign, 57 were malignant. Liver was the most common organ followed by kidney. Hepatocellular carcinoma was the most common malignant lesion.

Conclusion: Radiological-guided FNAC is simple, relatively quick and safe method in diagnosing intra-abdominal lesions. And can be used as a preliminary procedure in management of intra-abdominal lesions.

Key Words: Guided FNAC, Liver, Intra-abdominal.
Abstract No: OP 12

Title: Cytomorphological spectrum of space occupying lesions of liver.

Authors: Dr Anita Kumari, Dr Prathima S, Dr A S.Shivarudrappa

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Institution: Vydehi Institute of Medical Sciences & Research Centre, Bangalore.

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Abstract

Background & Aims: Liver is one of the most common sites for both neoplastic and non neoplastic lesions. Radiologically liver lesions can present either as diffuse involvement or as focal lesions and designated as Space Occupying Lesions (SOLs). Ultrasound abdomen is the first and most important diagnostic tool to diagnose suspected cases of liver diseases but it has its own limitations so combination with FNAC is a valuable technique to increase the diagnostic accuracy for diagnosing hepatic lesions. FNAC is a rapid, inexpensive and minimally invasive technique for diagnosis of liver lesions without significant complications. Aim is to evaluate the cytomorphological spectrum of hepatic lesions diagnosed on USG Guided FNAC in our hospital.

Materials and Methods: Prospective study comprising of 62 cases of liver lesions taken over a period of two years.

Results: Out of the 62 cases, the cytological diagnosis was rendered in 52(83.8%) patients and inadequate in 10 cases (16.2%). Out of 52 cases, 42 cases (80.8%) were diagnosed as neoplastic and 10 cases (19.2%) as non neoplastic lesions. Out of total 42 neoplastic cases, 30 cases(71.4%) were diagnosed as metastatic tumour, 11 cases (26.4%) diagnosed as Hepatocellular carcinoma and 1(2.2%) case diagnosed as hepatic adenoma. Out of 10 non neoplastic lesions, 5 cases (50%) diagnosed as cyst and other 5 cases (50%) were diagnosed as suppurative lesions.

Conclusion: Malignant tumours were the commonest of the liver lesions with higher incidence of metastatic deposits then primary malignancy. USG guided FNAC is simple, safe, minimally invasive and highly accurate technique that can be used to identify the majority of primary/metastatic hepatic neoplasia with high specificity.

Keywords: Fine needle aspiration cytology, hepatic lesions, ultrasonography.
Abstract

Background & Aims: FNAC has proven its value as an essential step in diagnosis of salivary gland lesions. A risk stratification of FNAC diagnostic categories has been recently proposed to be useful in reporting as there are many pitfalls in diagnosis of salivary gland cytology. Aim of the study is to evaluate the diagnostic accuracy of salivary gland FNA and to apply the proposed Milan system for reporting salivary gland lesions.

Materials and Methods: A retrospective audit of FNAC specimens of salivary gland lesions reported in 2016 and 2017 was considered. A correlation with histopathology and OPD follow up wherever available. The aspirates were categorized according to Milan system.

Results: A total of 62 salivary gland aspirates were evaluated: 6.4% were nondiagnostic, 35.4% nonneoplastic lesions, Atypia of undetermined significance 1.6%, 40.3% indicated available for 19 cases (30.6%). The overall concordance between cytologic and histologic diagnosis was 100%, for these 19 cases.

Conclusion: Salivary gland FNA continues to have high diagnostic accuracy and thus helpful for guiding management. Neoplasm with classic morphology are easily diagnosed, cases showing overlapping features the use of Milan system could be beneficial.

Keywords: Salivary gland FNAC, Milan system.
Abstract No: OP 14

Title: Application of Milan system for Reporting Salivary Gland Cytopathology

Authors: Dr Trupti K Bhovi, Dr Aneel Myageri

Designation of Presenting Author: Postgraduate

Institution: Shri Dharmasthala Manjunatheshwara Medical College and Hospital, Dharwad.

Email Id & Mobile No of presenting Author: bhovitrupti9@gmail.com, 9035150255

Abstract

Background & Aims: FNAC has proven its value as an essential step in diagnosis of salivary gland les-
sions. A risk stratification of FNAC diagnostic categories has been recently proposed to be useful in re-
porting as there are many pitfalls in diagnosis of salivary gland cytology. Aim of the study is to evaluate
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vary gland lesions.

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helpful for guiding management. Neoplasm with classic morphology are easily diagnosed, cases showing
overlapping features the use of Milan system could be beneficial.

Keywords: Salivary gland FNAC, Milan system.
Abstract No: OP 15

Title: Cytological and histopathological correlation of salivary gland lesions

Authors: Dr. Neha Sikdar, Dr. T.B.Uma Devi, Dr. Erli Amel Ivan

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Abstract:

Background & Aims: Head and neck swellings accounts for two-thirds of all body region aspirations. The lesions range from reactive inflammatory to neoplastic, which may be benign or malignant. Commonly presenting head and neck masses mostly involves salivary glands. Though histopathological diagnosis is gold standard for confirmation of FNAC findings, FNAC is an excellent first-line tool in providing an early diagnosis and thereby avoids the need for unnecessary surgical intervention. Aim of the study is to elucidate the cytomorphological features of various salivary gland lesions on FNAC and explore the diagnostic criteria by correlating with histomorphological findings.

Materials & Methods: The present study was done at the Department of Pathology, Sri Manakula Vinayagar Medical College, Pondicherry. FNAC was done using 24 gauge needle and 5 ml syringe and smears were stained with H&E and Giemsa stains. Histopathology was assessed on routine H&E stained paraffin sections. Cyto-histo correlation was done and overall diagnostic accuracy was calculated.

Results: The accuracy of FNAC in diagnosing salivary gland lesions was 72%. Age group between 51-60yrs was found to be the most common for salivary gland lesions and parotid was found to be the most common site for salivary gland lesions.

Conclusion: From this study it was concluded that fine needle aspiration cytology is an excellent first line of investigation for the diagnosis of various salivary gland lesions. However, there still remain few diagnostic dilemmas in which histopathology and immunohistochemistry confirmation is required.

Key Words: FNAC, Salivary gland lesions, Histopathology, Immunohistochemistry
Abstract No: OP 16

Title: Correlation of Fine Needle Aspiration Cytology with Histopathology in Breast Lesion

Authors: Dr Pratibha M Patil, Dr Sridhar H

Designation of Presenting Author: Post graduate

Institution: M S Ramaiah Medical College, Bengaluru

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Abstract:

Background & Aims: In India breast cancer stands second preceded by carcinoma of cervix in data of cancer registries. FNAC is a routine clinical procedure employed as a screening test for breast cancer along with mammography and clinical examination. Aim is to correlate breast lesions diagnosed cytologically with their histopathology finding and compare the diagnostic accuracy of FNAC in differentiating the benign and malignant lesions of palpable breast lumps with histopathological correlation.

Materials & Methods: A Retrospective study was done in department of pathology, M.S.Ramaiah Medical College during Jan2016-Dec2017. Patient with breast lesions on cytology were included in the study. cases were analyzed in detail regarding complete history, family history, clinical examination and other findings. 50 patients with lump underwent FNAC examined for diagnosis during this period. FNA slides were examined under light microscope after Haematoxlin and eosin, papanicalou staining and were categorized into i)benign ii) malignant lesions. Biopsy were done for the patients and results were correlated.

Results: The most common age group for benign lesions was between 21-30years. Malignant lesion was 50 to 60years. Fibroadenoma constituted highest number of cases among benign neoplasms and infiltrating ductal carcinoma contributed highest number of cases among malignant neoplasms. Out of these 50 cases, 30 were diagnosed as benign, 17 malignant and 3 suspicious for malignancy in FNAC. On histopathology, 30 were diagnosed as benign and 20 as malignant.

Conclusion: FNA is a early diagnostic tool for breast lumps, however histopathological examination (trucut biopsy) is definative diagnostic tool.

Key Words: FNA, Breast Lesions, Trucut biopsy
Abstract No: OP 17

Title: Study of cytomorphological features in Mucinous carcinoma of Breast with histopathological Correlation.

Authors: Dr Guruprasad C, Dr Panduranga C, Dr Srinivasa Murthy V

Designation of Presenting Author: Postgraduate

Institution: ESIC Medical College & Post Graduate Institute of Medical Science and Research Centre, Bangalore

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Abstract

Background & Aims: Mucinous Carcinoma breast is a relatively uncommon variant of breast carcinoma with distinctive histological and cytological features. It may exist in pure mucinous form or mixed mucinous-ductal types. Aim is to study the cytomorphological features of Mucinous carcinoma of breast with histopathological correlation.

Material and Methods: This is a retrospective study for 7 yrs from January 2012 to December 2017. All case files were achieved from the records of Department. Histopathologically confirmed cases of mucinous carcinoma (MC) of breast the corresponding cytology slides were retrieved and rescreened to study the cytomorphological features like cellularity, pleomorphism, arrangement, presence of mucin, Mucinophages, myxovascular fragments, granular cytoplasm, micronucleoli and signet ring cells.

Results: The present study yielded14 MC, 7 were pure Mucinous (PMC) and 7 were mixed mucinous-ductal carcinomas (MMD). Most common cytological features of PMC is intracellular and extracellular mucin followed by low cellularity and single cells. Mucinophages and myxovascular fragments are also seen. In MMD cellularity range from low to high with pleomorphic nuclei and scant extracellular mucin were key findings. IHC study revealed 2 cases triple negative, 7 cases ER+, PR+, HER2 –ve, 5 cases ER+, PR+, HER2 +. Mixed mucinous-ductal carcinoma cases showed better prognosis than the pure mucinous carcinoma group.

Conclusion: Knowledge of the distinctive cytomorphological appearance of Mucinous carcinoma would enable correct identification of these lesions as malignant and prompt treatment that could further enhance the survival of the patients.

Key Words: Mucinous, Mucinophages, Breast Carcinoma
Abstract No: OP 18

Title: Cytological grading systems of breast cancer inter-observer assessment

Authors: Dr Gowthami N, Dr Ashwini HN, Dr Nagaraj TS, Dr S.B.Patil, Dr K.S.Rajashekar

Designation of Presenting Author: Post Graduate student

Institution: JJJM Medical College, Davangere

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Abstract

Background & Aims: In developing countries, diagnosis of breast carcinoma is still made on fine needle aspiration cytology (FNAC). For the resource poor settings, FNAC is cheaper, less invasive and can sample different areas of the lesion. Cytological grading of the smears can provide valuable prognostic information and aid in planning the management options. Aim of study to assess inter-observer agreement in cytological grading of carcinoma breast through 3 different grading systems.

Materials & Methods: A total of 59 carcinoma breast FNAC (H&E, Giemsa and pap stained) smears were studied and graded independently by two pathologists. The cytological features were graded according to Robinson’s method, Scarff -Bloom-Richardson (SBR) grading system and grading systems proposed by Khan et al.

Results: FNAC of 59 cases of breast carcinoma were studied. Majority of cases were grade (3). The inter-observer agreement was analysed by Kappa measurement of agreement. All the three grading systems showed inter-observer agreement. Robinsons showed highest concordance (51 out of 59 cases 86.40% kappa value = 0.73) of grading among two pathologist followed by SBR and Khans

Conclusion: Cytological grading of breast carcinoma is feasible and provides valuable prognostic information. Hence we propose this to be included in FNAC report of breast malignancies. In present study Robinson’s method of cytological grading in fine needle aspiration smears of breast carcinoma is simpler, objective and easily reproducible, hence being preferable for routine use.

Key Words: FNAC, Breast carcinoma, Cytological grading
Abstract No: OP 18

Title: Cytological grading systems of breast cancer inter-observer assessment

Authors: Dr Gowthami N, Dr Ashwini HN, Dr Nagaraj TS, Dr S.B.Patil, Dr K.S.Rajashekar

Designation of Presenting Author: Post Graduate student

Institution: JJJM Medical College, Davangere

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Abstract

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Key Words: FNAC, Breast carcinoma, Cytological grading

Abstract No: OP 19

Title: Significance of Modified Masood’s Scoring System in Cytological Diagnosis of Palpable Breast Lumps

Authors: Dr. Harini V.R, Dr. Niranjan J, Dr. Sumana B.S, Dr. Shivarudrappa A.S

Designation of Presenting Author: Postgraduate

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Abstract

Background & Aims: Fine needle aspiration cytology is a vital preliminary diagnostic tool in assessing breast lumps. Masood et al., proposed a cytological scoring system for evaluating breast lumps, which was further modified by Nandhini et al. and named it as Modified Masood’s scoring system (MMSS). Aim is to evaluate the significance of MMSS in cytological diagnosis of palpable breast lumps along with histopathological correlation.

Materials and Methods: A 3 years retrospective study was performed. Cytomorphological evaluation of palpable breast lumps were done and scored simultaneously with MMSS. The findings were correlated with histopathology. Fisher’s exact test was performed to assess if Modified Masood’s scoring system is superior to conventional cytological examination in diagnosis of palpable breast lumps.

Result and Conclusion: Yet to be compiled, will be presented in the conference.

Key Words: Modified Masood’s scoring system, palpable breast lumps, cytological scoring
Abstract No: OP 20

Title: Significance of Nuclear Morphometry as A Diagnostic Tool in Fine-Needle Aspirates of Breast Masses

Authors: Dr Akanksha Sharma, Dr Indrani K, Dr Raja Parthiban

Designation of Presenting Author: Postgraduate

Institution: MVJ medical college and Research Hospital, Hoskote

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Abstract

Background & Aims: Breast carcinoma has emerged as the leading malignancy in Indian women surpassing carcinoma cervix, due to various factors. Fine needle aspiration cytology (FNAC) is one of the preliminary investigations in preoperative diagnosis and management of breast lesions. Quantitative evaluation of nuclear parameters on cytological smears can be utilized as a tool to distinguish benign and malignant lesions. Aim is to assess the utility of the nuclear morphometric parameters in cytological aspirates to categorize breast lesions.

Materials & Methods: The present study has been conducted as a pilot project at our hospital for one year, from January to December 2016. Nuclear parameters were analysed in 34 cases of breast lump aspiration. Out of these 34 cases, there were 18 benign lesions and 16 malignancies, confirmed on histopathology. Image J software was used to measure parameters like mean nuclear area (MNA), mean minimum nuclear diameter (MmND), mean maximum nuclear diameter (MMND) and mean nuclear perimeter (MNP). The parameters calculated were mean axis ratio (MAR), Mean nuclear compactness (MNC) and mean nuclear shape factor (MNS). Further relevant statistical analysis was performed.

Results: Nuclear morphometry could differentiate between benign and malignant lesions with increasing nuclear size parameters like mean nuclear area (MNA), Mean nuclear perimeter (MNP) and mean axis ratio (MAR). The shape parameter namely Mean nuclear Shape (MNS) did not show significant difference between benign and malignant lesions.

Conclusion: Nuclear morphometry is a highly objective tool to supplement the relatively subjective FNAC analysis, especially in cases with diagnostic dilemma.

Key Words: Breast cancer, FNAC, Nuclear parameters, morphometric analysis
Abstract No: OP 21

Title: Interobserver Variability by Applying a New International Academy of Cytology Standardised Reporting System of Breast Cytology.

Authors: Dr. Ragavi V, Dr. Deepak Kumar B, Dr. Srinivasa Murthy V

Designation of Presenting Author: Postgraduate

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Abstract:

Background & Aims: Breast FNAC has been used successfully to diagnose the lesions of breast and it is very cost effective diagnostic tool in developing countries. There are many changes in the roles of fine-needle aspiration cytology (FNAC) in the diagnostic workup of breast lesions. A structured reporting system will improve the quality, clarity and reproducibility of the reports and provides a basis for quality measures which improves the patient care. Aim is to classify the breast lesions into five categories according to IAC system of reporting and to study the inter observer variability and efficacy of the new system of reporting breast cytology

Materials & Methods: 60 retrospective cases of clinically palpable breast lesions which were diagnosed both cytologically and histopathologically was included. Four pathologist blinded for the diagnosis, were asked to assess the cytology slides according to new IAC structured reporting system for breast cytology and inter observer variability among pathologist was calculated.

Results: Out of 60 cases 24 (40%) of cases were in concordance with all 4 observers and also with histopathology diagnosis and 21 (35%), 9(15%), 4(6%) cases had discrepancy in single, two and three observers respectively.

Conclusion: By applying this new system in reporting the efficacy increases and interobserver variability decreases if the number of observers are increased

Key Words: Breast FNAC, IAC, inter observer variability.
Abstract No: OP 22

Title: Role of FNAC as a diagnostic modality in Paediatric lesions.

Authors: Dr. Malathi M, Dr. Archana M, Dr. Baalu S, Dr. Ashwini Naragund, Dr. Anuradha Kapali, Dr Padma M

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Background & Aims: In India 1.6-4.8% of cancers occur in children and a mortality rate of 14-34 million children per year. Leukemia contributing to 25-40%, is the most common childhood cancer. FNA when combined with ancillary techniques, such as immunocytochemistry/ immunohistochemistry (IHC) on cell block, flow cytometry, and cytogenetics helps in precise characterization of these childhood malignancies. FNA helps in the rapid diagnosis of childhood cancers which is crucial as they have an increasing likelihood of cure with appropriate treatment. Aim is to evaluate the role of FNA as a diagnostic tool in the diagnosis of paediatric lesions.

Material & Methods: FNAs performed in paediatric patients from January 2015 to December 2016 were retrieved from the cytology register. Standard FNA procedure was followed with imaging guidance being sought for deep seated lesions. Cases were analyzed for age, gender, site and cytomorphology. Ancillary tests performed included cell block study, IHC, flow cytometry and cytogenetics based on clinical findings and cytomorphology. Histopathologic correlation was done wherever feasible.

Results: A total of 428 paediatric FNAs were done, which included 331 neoplastic and 97 non-neoplastic lesions. The mean age was 4.6 years, with 274 boys and 154 girls. The most common neoplastic and non-neoplastic lesions were small round cell tumours (236) and reactive lymphadenitis (56) respectively. Additional ancillary tests like CB and IHC aided in final diagnosis of 102 cases.

Conclusion: Easily feasible FNA test, has less turnover time and avoids biopsy procedure which requires anaesthesia. Correlating cytomorphologic study, CB with IHC study and FCM with clinical and imaging data helps give a definitive diagnosis with a high level of confidence. This helps the clinician to start the management at the earliest.

Key Words: FNAC, Paediatric tumors
Abstract No: OP 23

Title: Cytological Analysis of Body Fluids and Comparison of Precision In Diagnosis Between Conventional Smear And Cell Block Along With Clinical Correlation

Authors: Dr Ganraj Bhat, Dr Sridhar H

Designation of Presenting Author: Postgraduate

Institution: M S Ramaiah Medical College, Bengaluru

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Abstract

Background & Aims: Aspiration of body fluids from visceral cavities is non-invasive, simple and important diagnostic modality. Pleural, peritoneal, pericardial and cerebrospinal fluids are commonly sent for cytological analysis to find out etiology as well as prognosis of the disease process along with therapeutic implications. Aim of the study is to see utility of conventional smear and cell block in cytological analysis of body fluids.

Material & Method: This is a retrospective study conducted on a sample size of 100. The body fluid were sent to our laboratory at M S Ramaiah hospital for cytological analysis from December 2015 to December 2017. The results of the conventional smear and cell block for individual fluids along with clinical data were statistically analyzed and interpreted.

Results: The study was conducted on 100 cases and overall morphology, cellularity, cytoplasmic and nuclear details were studied in both conventional smear and cell block. We found statistically significant difference between both the techniques.

Conclusion: The utility of Cell block was found to be very significant and accurate in making a diagnosis especially in malignant effusions.

Key Words: Body Fluids, Cytodiagnosis, Conventional Smear, Cell Block
Abstract No: OP 24

Title: Appositeness of Cell Block in Ascitic and Peritoneal Fluid Malignancy Detection.

Authors: Dr Anusha Shetty, Dr Vidisha Athanikar

Designation of Presenting Author: Postgraduate

Institution: Shri Dharmasthala Manjunatheshwara Medical College and Hospital, Dharwad.

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Abstract

Background & Aims: Use of cell block in body fluids dates back to 1895. Conventional slide preparations are usually obscured by blood or mucus and show cell degeneration. Cell block outtaxes conventional smears by being able to utilize excess material and produce parallel sections for special stains and immunological studied. Aim is to evaluate the usefulness of cell block in detection of malignancy in ascitic and peritoneal fluid.

Materials and Methods: Institutional based 2 years retrospective study compiled 330 cases for evaluation of malignancy, for which conventional slide preparations and cell blocks were made. Radiology and histology reports were reviewed. Conventional slide preparations were stained by haematoxylin and eosin, Leishman and PAP stains. Cellblock was prepared by thromboril plasma method.

Results: Study showed sensitivity of 100%, specificity of 89.2%, positive predictive value of 97% and p value of 0.0206(significant). 92% of correlation was see with radiology and histology reports.

Conclusion: This study here by evaluates the pertinence of cellblock method in detection of malignancies in adjunct with conventional smears and of its imperativeness in every day practice.

Key Words: Cell block, Ascitic fluid, Peritoneal fluid
Title: Needle hub material- An under utilized gold mine

Authors: U Sudhakar Reddy (Cyto Technologist), Dr Aparna Gangoli Dr Komal Chippalkatti

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Background & Aims: Needle hub material is the material which is the last drop in the hub of needle used for FNAC. Needle hub material is processed using nathans cellblock method. Aim is to study the benefits of retrieving needle hub material during conventional FNAC material.

Materials and Method: 50 needle hub materials of Image guided or Non-Image guided FNA of various sites were collected by the routine method rinsed with 50% alcohol and processed. Rinsed material were centrifuged for 5 minutes at 3000 RPM and sediment was fixed with alcohol formalin and was processed and stained with routine histopathology stain.

Results: The Sections had adequate cellularity. Area to screen was limited with well preserved morphology. There was no wastage of even small amount of cellular material

Conclusion: The method of Needle hub cell block is cost effective technique which does not require expensive chemicals and equipment's but can give better diagnostic information, Further ancillary testing is possible and this method is easy to implement in day to day practice. The additional benefit of this method is that the diagnostic material can be retrieved from the needle hub and is utilized without any wastage.

Key words: FNAC, PAP. MGG & H&E stains.
Abstract No: OP 26
Title: Pitfalls in the diagnosis of papillary thyroid carcinoma on fine needle aspiration cytology
Authors: Dr Ponkhi Doley, Dr Panduranga C, Dr Srinivasamurty V
Designation of Presenting Author: Post Graduate (DCP)
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Email Id & Mobile No of presenting Author: ponkhidoley7@gmail.com, 9435762160
Abstract
Background & Aims: Fine needle aspiration cytology (FNAC) is a safe, minimally invasive, and quick screening method for diagnosis of papillary carcinoma of thyroid(PCT). In spite of several advantages sometimes it fails to provide accurate diagnosis. Aim of the study is to identify the limiting factor for inaccurate diagnosis of PCT on FNAC.
Materials and Methods: This is a retrospective study of 5 years, (January 2013 to December 2017). All the case files of histopathology confirmed cases of PCT were retrieved, and the corresponding FNAC slides of the particular patient were rescreened to rule out the causes of misdiagnosis.
Results: During the study period a total of 24 cases of PCT were available, out of 24 cases 7 cases had cytology and histopathology correlation. In 17 cases were discordant. And all these 14 cases were diagnosed as colloid goitre/ nodular goitre/ hashimoto’s thyroditis on cytology. The main limiting was low cellularity followed by thin colloid and cystic changes. Upon rescreening all cases showed thick colloid (100%), three dimensional papillary clusters and intranuclear inclusion were observed in 2 cases.
Conclusion: In cases of nodular goitre, presence of thick colloid and three dimensional papillary clusters suggest the underlying PTC.
Keywords: FNAC, papillary thyroid carcinomas, diagnostic pitfalls.
**Abstract No: OP 27**

**Title:** Diagnostic utility of Bronchoalveolar lavage in detecting lung malignancies.

**Authors:** Dr Rutuja A Burji, Dr Deepak Kumar B, Dr Vani BR, Dr Srinivasa Murthy V.

**Designation of Presenting Author:**

**Institution:** ESIC PGIMSR Medical College, Rajajinagar, Bangalore

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**Abstract**

*Background & Aims:* Lung cancer is the second most common cancer in both males and females. In the era of personalised medicine, minimally invasive methods like Bronchoalveolar lavage (BAL) and biopsy are gaining importance. The role of BAL in diagnosing malignancies varies with sensitivity ranging from 35.5% to 80.9% in various studies. Aim is to determine the efficacy of Bronchoalveolar lavage in diagnosing malignancies in suspected cases of lung carcinoma.

*Materials and Methods:* A retrospective study was done for a period of three years (2015-2017). Out of 125 Bronchoalveolar lavage samples, 75 cases had concurrent samples of biopsy, and were hence included in the study. Clinico-radiological details were collected from hospital records. Cytology slides of BAL samples and histopathology slides of lung biopsy were retrieved from archives and reviewed.

*Results:* Mean age of patients was 53.6 years with male preponderance. 32 were diagnosed as malignancy on histopathology, of which 8 cases were also positive on BAL cytology. Squamous Cell Carcinoma was the commonest type. The sensitivity of BAL is 25% and specificity is 86%.

*Conclusion:* Though biopsy enables final diagnosis and typing of lung malignancies, bronchoalveolar lavage proves to be a good ancillary test with a positive predictive value of 57%.

*Keywords:* Bronchoalveolar lavage, lung biopsy, lung carcinoma.
Abstract No: OP 28

Title: Hashimoto’s thyroiditis: analysis of cytological pattern and grading in correlation with thyroid function tests and clinicoradiological picture

Authors: Dr. Rohini Dhanya C S, Dr. Anuradha C K Rao

Designation of Presenting Author: Postgraduate

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Background & Aims: Hashimoto’s thyroiditis (HT) is a commonly diagnosed thyroid lesion on FNAC, showing characteristic cytological features which can be graded. This study correlates the clinical, biochemical status, immunological and ultrasonographic findings with the cytomorphological features and grading.

Materials and Methods: A one year retrospective study in department of pathology showed 14 cases of Hashimotos thyroiditis. The clinical manifestations, biochemical, ultrasonographic and cytomorphologic features were analysed. The cases subjected to surgical intervention were histopathologically correlated.

Results: Of the 14 patients studied, 13 were females, with a predominance of the 40-50 years age group, all presenting with diffuse thyromegaly. Thyroid function test showed increase in TSH in 7 cases, reduced T4 in 5 and T3 in 3 cases respectively. Smears obtained were moderately cellular with predominant lymphoid impinging of follicles along with lymphoid follicles; hurthle cells were not prominent. Scattered giant cells and absence of granulomas was noted. Grading showed 8(57%) grade 2, 1 grade 3 cases, with significant hypothyroid status; grade 1 was predominantly seen with increased TSH levels.

Conclusion: Cytology is a significant tool in diagnosing Hashimoto’s thyroiditis, with lymphocytic impinging of follicles being pathognomonic. A cytological grading system using definite criteria may further help in deciding the cases that may proceed to hypothyroidism earlier.

Keywords: Hashimoto’s thyroiditis, cytomorphologic features, TFT, lymphocytic infiltration.
Abstract No: OP 29

Title: Ultrasound Guided Fnac of Non Palpable Thyroid Lesions

Authors: Dr Varsha Mucharla, Dr Jayashree, Dr Bharath

Designation of Presenting Author: Postgraduate

Institution: Vijayanagara Institute of Medical Sciences, Ballari

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Abstract

Background & Aims: To determine the efficacy of USG guided FNAC and to see the usefulness of FNA by Bethesda system for reporting thyroid cytology for non palpable thyroid nodules through ultrasound guidance for the evaluation and treatment planning.

Material & Methods: The study was conducted on 46 patients with altered T3, T4 and TSH levels, presenting with symptoms of hypo/hyperthyroidism and having a non palpable thyroid nodule. The age ranged between 25-65 years, of which 2 were male. Patients were scanned and USG guided FNAC was performed. Findings were documented, analysed and cytological diagnosis achieved.

Results: Unsatisfactory – 6, Benign – 24, Atypia of undetermined significance – 6, Suspicious of follicular neoplasm – 5, Suspicious for malignancy – 3, Malignant - 2

Conclusion: USG guided FNAC is cost effective and reliable method to determine the benignancy and malignancy of non palpable thyroid lesions and accordingly plan the treatment strategy.

Key Words: FNAC, Thyroid

Abstract No: OP 29

Title: Ultrasound Guided Fnac of Non Palpable Thyroid Lesions

Authors: Dr Varsha Mucharla, Dr Jayashree, Dr Bharath

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Material & Methods: The study was conducted on 46 patients with altered T3, T4 and TSH levels, presenting with symptoms of hypo/hyperthyroidism and having a non palpable thyroid nodule. The age ranged between 25-65 years, of which 2 were male. Patients were scanned and USG guided FNAC was performed. Findings were documented, analysed and cytological diagnosis achieved.

Results: Unsatisfactory – 6, Benign – 24, Atypia of undetermined significance – 6, Suspicious of follicular neoplasm – 5, Suspicious for malignancy – 3, Malignant - 2

Conclusion: USG guided FNAC is cost effective and reliable method to determine the benignancy and malignancy of non palpable thyroid lesions and accordingly plan the treatment strategy.

Key Words: FNAC, Thyroid
Abstract No: OP 30

Title: Fine Needle Aspiration Cytology of Thyroid Lesions and Correlation with Histopathology – A 1 Year Study.

Authors: Dr Zaryab Zaki, Dr A.M.Patil, Dr Anushree, Dr Gulnar

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Institution: Al-Ameen Medical College, Vijayapura

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Abstract

Background Aims: Disorders of thyroid include a vast array of inflammatory, immunologic and neoplastic disorders. Fine needle aspiration (FNA) has an essential role in the evaluation of patients with a thyroid nodule. Aim is to study the accuracy of thyroid FNAC findings comparing with histopathology thyroid nodule.

Material & Methods: All the patients referred for FNAC of thyroid lesions in the cytology unit of Al-Ameen Medical College, Vijayapura were studied from December 2016 to December 2017. FNAC thyroid was done on 194 cases and slides were stained with papanicolaou stain, H&E stain. The cases were followed by post operative specimen received from the department of surgery and histopathological examination was done.

Results: On FNAC, Out of 194 cases the most common non neoplastic lesion was colloid and multinodular goitre followed by hashimoto’s thyroiditis. Similar pattern was observed on histopathological examination.

Conclusion: Fine needle aspiration (FNA) has an essential role in the evaluation of thyroid patients with a thyroid nodule. Current study shows there is high sensitivity (89%) and specificity (93%) of diagnosing a thyroid disorder through FNAC.

Key Words: FNAC, Thyroid,
Abstract No: OP 31

Title: Role of Fine needle aspiration cytology as a diagnostic tool in lymphadenopathy with special emphasis on Tuberculous lymphadenopathy

Authors: Dr Mohamed Hamza A, Dr Subhan Ali R, Dr Shilpa G, Dr Roopa A.N, Dr Raja Parthiban.

Designation of Presenting Author: Postgraduate

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Abstract

Background & Aims: Lymphadenopathy is a common, nonspecific clinical sign. Fine Needle Aspiration Cytology (FNAC) is the first line of investigation in the evaluation of lymphadenopathy. FNAC material can be used for cytological evaluation and other ancillary tests. Aim is to evaluate the role of FNAC as a diagnostic tool in lymphadenopathy and to assess the role of ancillary tests in suspected cases of tuberculous lymphadenopathy.

Materials & Methods: Study period - January 2017 to December 2017. A total of 69 cases of lymphadenopathy were subjected to FNAC. Data from ancillary tests performed like ZN stain, Auromine Rhodamine and CBNAAT on the FNAC material was analysed.

Results: In the 69 cases studied, the age ranged from 1-90 years, Male:Female ratio 1.09. Most common site was cervical and cytological pattern was reactive -29(42%) followed by granulomatous -26(37.6%). ZN stain was done on 40 clinically suspected tuberculosis cases, of which 6(15%) were positive. One case of suppurative and seven cases of granulomatous were found to be positive for Tuberculosis by CBNAAT.

Conclusion - FNAC is simple, cost effective diagnostic tool with high degree of accuracy. FNAC coupled with ZN staining is the first line of investigation for Tuberculous lymphadenopathy. According to New RNTCP guidelines CBNAAT sputum is a must for pediatric cases. The present study highlights the utility of CBNAAT from FNAC material as an adjuvant in the diagnosis of Tuberculosis.

Key Words: FNAC, Tuberculous lymphadenopathy, CBNAAT
Abstract No: OP 32

Title: Compendium of Urinalysis – Urine Reagent Strips and Microscopy

Authors: Dr Meghana P, Dr Nataraju G, Dr Gayathri M N

Designation of Presenting Author: Postgraduate

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Abstract

Background & Aims: Urine examination also referred to as liquid renal biopsy has provided valuable clinical information about the functional status of the kidney. These results can be relied for a number of applications, including screening for diagnosis of asymptomatic disease, monitoring and following the course of a disease. Deplorably, because of the routine nature of this test, pathologists often spend comparable time examining both normal and abnormal urine specimens in an unsystematic fashion.

Material & Methods: Dipstick urinalysis and microscopy was carried out on 100 urine samples of patients and the results were analyzed.

Results: Statistical analysis showed comparable results between the dipstick urinalysis and microscopy.

Conclusion: Pre-screening the urine specimens to select those requiring microscopic examination resulted in a superior microscopic examination and faster results.

Key Words: Urinalysis, urine reagent strips, microscopy
Abstract No: OP 33

Title: Diagnostic Utility of Various Techniques Used in Body Fluid Cytology

Authors: Dr Vidya Kuchanur, Dr Sunilkumar K.B, Dr S.B.Patil, Dr Rajashekar KS.

Designation of Presenting Author: Postgraduate

Institution: JJM Medical College, Davangere

Email Id & Mobile No of presenting Author: vidyakuchanur@gmail.com, 9481311896

Abstract

Background & Aims: Cytological examination of serous fluids is one of the commonly performed investigations. It is an important tool for the diagnosis of malignancies, especially when other diagnostic tests cannot be performed on the patient. Diagnostic problem arises in everyday practice to differentiate reactive atypical mesothelial cells from malignant cells by routine conventional smear method. Aim is to compare the general cytological, morphological features of the conventional smear method with those of liquid based cytology (Eziprep) and cell block and to assess utility in the cytdiagnosis of effusion.

Materials and Methods: A total of 100 serous fluid samples over a period of six months, were subjected to simultaneous processing by conventional smear, an Eziprep liquid based cytology smear and cell block technique. Results compared for general cytological, specific cellular features and diagnostic utility for malignancy.

Results: Samples comprised 68 pleural, 30 ascitic and two pericardial effusions. Significance of difference of each parameter for three groups was performed using Kruskal-Wallis Test. No statistically significant difference was noted with respect to cellularity and cell distribution. As for the remaining parameters, liquid based cytology provided statistically significant clearer background (p <0.0001), while conventional smear and cell block provided significantly better staining quality (P values 0.01) and sharper morphological features (P values 0.05). Additional yield for malignancy was 11% more by cell block method.

Conclusion: The cell block technique not only increased the positive results for malignancy, but also helped to demonstrate better architectural patterns, which could be of great help in making correct diagnosis of the primary site. The cell block technique was also useful for special stains and immunohistochemistry.

Key words: Fluid cytology, conventional smear, cell block, liquid based cytology
Abstract No: OP 34

Title: Pre-operative cytology and intra-operative frozen section: A comparative study of tumor & tumor like lesions

Authors: Dr Varsha Shree R, Dr Supreetha MS, Dr Das S

Designation: Postgraduate

Institution: Sri Devaraj Urs Medical College, Sri Devaraj Urs Academy of Higher Education and Research, Tamaka, Kolar, Karnataka

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Background & Aims: Pre-operative & intra-operative diagnosis plays very crucial role in cases of neoplasm which carries a considerable weight in surgeon’s decision regarding the treatment protocols. Cytology being one of most common simple, rapid screening procedures for diagnosis is a reliable method for pre-operative diagnosis. The frozen section plays a more crucial role in surgeon’s decision during surgery. The frozen section is a valuable procedure for confirmation of cytological diagnosis. Cytology has gained more importance as a screening procedure in recent decade. Hence we would like to compare cytological & frozen section diagnosis and also to bring about the improvement in cytological diagnosis. Aim of the study is to evaluate the correlation of fine needle aspiration cytology & frozen section biopsy specimen in our centre.

Materials and Methods: Study design: Descriptive cross sectional study conducted from Jan 2016 to December 2017 conducted at Department of Pathology, Sri Devaraj Urs Medical College, Kolar. All the cytology cases (FNAC and Pap reports) having corresponding frozen section slides / reports were retrieved from the archives of Pathology department and screened by two Pathologists.

Results: A total of 14 cases of tumor and tumor-like lesions were included in the study. Of these, 8 (57.14%) were benign and 6(42.85%) were malignant cases. Among these gynecology cases were most common (50%) followed by thyroid(28.57%), breast(14.28%) & 1 case of nose. Cytohistomorphological correlation was done taking histopathology as gold standard. The sensitivity, specificity, PPV, NPV & diagnostic accuracy for cytology is 40%, 77.78%, 50%, 70% & 64.29% respectively and for frozen section is 100%, 100%, 100%, 100% & 100% respectively.

Conclusion: Pre-operative cytology & frozen section are useful, quick & reliable procedure for rapid & early diagnosis in the operative theatre & can be used as an adjunct to histopathology for better management of patients.

Key Words: Cytology, Frozen section
Abstract No: OP 35

Title: Study of Image Guided Fine Needle Aspiration Cytology of Intra-Abdominal Lesions.
Authors: Dr Ganga H

Designation of Presenting Author: Assistant professor

Institution: Subbaiah Institute of Medical Sciences, Shimoga.

Title: Cytological pattern analysis of cervical PAP smears in perimenopausal and postmenopausal age group in a Tertiary care hospital.

Background & Aims: PAP smear is a routinely used cytological screening test to detect precancerous lesions of the cervix besides ovarian hormonal activity assessment. Since postmenopausal cervical epithelium is responsive to estrogen, a pattern analysis of the cervical cytology can help ascertain the estrogen activity. Pap smear hence serves dual function of evaluation of ovarian function and early preneoplastic cervical changes.

Materials & Methods: A retrospective study was conducted in the department of Pathology, YMCH. 83 Pap smears from the perimenopausal and postmenopausal age group between June - December 2017 were included. Cytological pattern, inflammatory changes, presence of organisms, multinucleate giant cells, features of endocervicitis, background and cellular abnormalities were analysed.

Results: Of the 83 slides reviewed 52 perimenopausal, 31 postmenopausal women smears were assessed, with 23% and 6% respectively showing atrophic cytology. Infective changes were noted in 39% of perimenopausal and 22% postmenopausal women. The prevalence of epithelial cell abnormality was found to be more in the postmenopausal age group (4.9%).

Conclusion: Routine Pap tests in the postmenopausal and perimenopausal age groups can help early identification of high estrogen levels and hence hormone related preneoplastic lesions of the female genital tract. This can further aid in early and effective treatment, besides prevention of progression to malignancy.

Key Words: Pap Smear, Postmenopausal, Perimenopausal
Abstract No: OP 18

Title: Cytological grading systems of breast cancer inter-observer assessment

Authors: Dr Gowthami N, Dr Ashwini HN, Dr Nagaraj TS, Dr S.B.Patil, Dr K.S.Rajashekar

Designation of Presenting Author: Post Graduate student

Institution: JJJM Medical College, Davangere

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Abstract

Background & Aims: In developing countries, diagnosis of breast carcinoma is still made on fine needle aspiration cytology (FNAC). For the resource poor settings, FNAC is cheaper, less invasive and can sample different areas of the lesion. Cytological grading of the smears can provide valuable prognostic information and aid in planning the management options. Aim of study to assess inter-observer agreement in cytological grading of carcinoma breast through 3 different grading systems.

Materials & Methods: A total of 59 carcinoma breast FNAC (H&E, Giemsa and pap stained) smears were studied and graded independently by two pathologists. The cytological features were graded according to Robinson’s method, Scarff-Bloom-Richardson (SBR) grading system and grading systems proposed by Khan et al.

Results: FNAC of 59 cases of breast carcinoma were studied. Majority of cases were grade (3). The inter-observer agreement was analysed by Kappa measurement of agreement. All the three grading systems showed inter-observer agreement. Robinsons showed highest concordance (51 out of 59 cases 86.40% kappa value = 0.73) of grading among two pathologist followed by SBR and Khans

Conclusion: Cytological grading of breast carcinoma is feasible and provides valuable prognostic information. Hence we propose this to be included in FNAC report of breast malignancies. In present study Robinson’s method of cytological grading in fine needle aspiration smears of breast carcinoma is simpler, objective and easily reproducible, hence being preferable for routine use.

Key Words: FNAC, Breast carcinoma, Cytological grading

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Abstract No: OP 36

Title: Spectrum of pediatric tumors diagnosed by fine needle aspiration cytology

Authors: Dr Chethan Sagar S

Designation of Presenting Author: Tutor/Senior Resident

Institution: Shimoga Institute of Medical Sciences, Shivamogga

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Abstract

Background and Objectives: To evaluate the role of FNAC (fine needle aspiration cytology) in pediatric age with special reference to tumors.

Materials and methods: It is retrospective study of FNAC in children <18 years of age presenting with swelling was studied from Jan 2016 to Dec 2017 in our institute.

Results: Of the total 407 FNAC studied 57(14%) belonged to pediatric age group(<18years). Among the pediatric cases 46(81%) were non-neoplastic which includes lymphocytic thyroiditis, Infected epidermal cyst, thyroglossal cyst, suppurative and granulomatous lymphadenitis and 11(19%) were neoplastic which includes lipoma, hemangioma pleomorphic adenoma, non hodgkin’s lymphoma and spindle cell lesions. Histopathological correlation was done wherever possible. Diagnostic accuracy for non neoplastic lesions was 92.98%. Diagnostic accuracy for neoplastic lesions was 100%

Conclusion: FNAC is a safe and cost effective procedure with good patient acceptance, less morbidity with high diagnostic accuracy.

Key Words: FNAC, Pediatric, Tumors
Abstract No: OP 37

Title: Cytomorphologic spectrum of Hashimoto’s thyroiditis and its correlation with thyroid hormone status and hematological parameters.

Authors: Dr.Archana Shetty, Dr.Vijaya C

Designation of Presenting Author: Associate Professor

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Abstract

Background & Aims: To grade Hashimoto’s thyroiditis based on cytomorphology and to correlate the cytological grades with thyroid hormone status and basic haematological parameters.

Materials & Methods: During a period of two and a half years 1762 patients underwent FNAC of thyroid at our tertiary healthcare centre. Out of these 102 cases had cytological evidence of lymphocytic thyroiditis with 58 cases having thyroid hormone levels and haematological parameters for correlation.

Results: Of the 58 cases, 55 were females, age ranging from 19 years to 65 years, with majority of patients in third decade. Diffuse enlargement of thyroid was the commonest presentation, 13 cases presented with nodular disease. Majority of the patients had grade II thyroiditis (20 cases – 34.5%), followed by grade I (33 cases- 56.9%) and grade III (5 cases -8.6%). Elevated TSH was seen in 74.2% of cases, with 39.7% of patients presenting with subclinical hypothyroidism & 18.9% being euthyroid. The P values for the haematological parameters studied were – Hb (0.9), TC (0.2), RBC counts (0.9) and platelets (0.8) when compared with the cytologic grades. Conclusion: Cytomorphological grading of Hashimoto’s thyroiditis can explain the pathogenesis of this autoimmune disease. Subclinical hypothyroidism is the most commonly observed hormonal status, with no significant statistical correlation of the cytological grades with thyroid status and studied haematological parameters.

Key Words: Hashimoto’s thyroiditis, Cytological grading, Haematological parameters
Title: Utility of Fine Needle Aspiration Cytology in Diagnosing Head and Neck Swellings

Authors: Dr Chaithanya K, Dr Amrutha Gorva, Dr S Shivakumar

Designation of Presenting Author: Assistant Professor

Department: Pathology

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Abstract

Background & Aims: Head and neck swellings are frequently encountered in general practice ranging from inflammatory, reactive, benign or malignant lesion posing a diagnostic dilemma. Fine Needle Aspiration Cytology (FNAC) is a very simple, quick, inexpensive and minimally invasive technique used to diagnose different types of swellings like lymph node, thyroid, soft tissue, skin nodules and salivary glands in head and neck region. Aim is to evaluate role of FNAC as a routine procedure in diagnosing head and neck lesions and analyses the frequency and incidence of lesions, their distribution and cytological features.

Materials & Methods: This is a retrospective study of 6 months from 1st July 2017 to 31st December 2017 of all FNAC’s performed on head and neck lesions reporting to our institute. Cytological study of all the FNAC’s performed were evaluated. Relevant clinical details were obtained from the patients records.

Results: Of 1190 FNA’s done in this period 598 cases were head and neck lesions (50.25%). Patients age ranged from 2 months to 86 years with female to male ratio being 1.74:1. Thyroid lesions were most common 220 (36.8%), followed by lymphnode lesions 172 (28.8%), skin and soft tissue lesions (28.5%) and salivary gland lesions (5.9%). In all categories inflammatory lesions were most common followed by benign lesion. Most common malignant lesion was metastatic deposits followed by papillary carcinoma thyroid. There was one case of pleomorphic sarcoma.

Conclusion: Our study found that FNAC is simple, quick, safe and cost effective OPD based technique to diagnose different types of head and neck swellings. It could differentiate the infective and benign process from neoplastic one and helps clinicians to plan the management early.

Key Words: Fine Needle Aspiration Cytology (FNAC), Head and neck swellings, Thyroid, Lymph node
Title: An Internal Auditing of Thyroid Cytology Reporting

Authors: Dr Anita P Javalgi, Dr Aneel Myageri, Dr U S Dinesh

Designation of Presenting Author: Associate Professor

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Abstract

Background & Aims: Thyroid fine-needle aspiration (FNA) has proven to be an accurate, safe, efficient, and cost effective management tool in patients with thyroid nodules. Various 4- to 6-tiered reporting schemes for thyroid cytology have been proposed and their validity has been demonstrated. The most controversial points concern the definition of the “indeterminate” cytology and the consequent non negligible rate of unnecessary diagnostic surgery. Aim is to do auditing of thyroid reporting system and identifying the pitfalls and compare various thyroid cytology reporting system with Bethesda system to overcome the pitfalls.

Methodology: It is one year study where all thyroid cytology cases were reviewed. Double blinding was done where the consultant cytologist were not aware about the case and primary diagnosis. All cases were reviewed under following reporting system 1. Bethesda system for reporting thyroid cytology (TBSRTC), 2. RCPath, 3. Italian, 4. Australian, 5. Japanese

Results: Out of 69 thyroid FNAC cases, 36 cases had histopathological diagnosis correlation. Out of 36 cases, 16 cases had shown disparity in cytological diagnosis (TBSRTC) and histopathological diagnosis, which on internal auditing review of these cases there was revision of diagnosis, cases which were highly suspicious were categorised as low intermediate risk cases.

Conclusion: Periodical internal auditing of thyroid cytology reporting helps in better diagnosis. RCPath / Italian reporting system are better reporting system for thyroid cytology diagnosis.

Key Words: Thyroid Cytology, RCPath, Italian Reporting
Title: Role of Fine needle aspiration cytology in diagnosis of lymphadenopathy: Thirteen years experience from a tertiary care centre.

Authors: Dr. Panduranga.C, Dr. Guruprasad C, Dr. Srinivasamurthy V

Designation of Presenting Author: Associate Professor

Institution: ESIC Medical College and Postgraduate Institute of Medical Sciences and Research, Rajajinagar, Bengaluru.

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Abstract:

Background & Aims: Lymphadenopathy is one of the commonest clinical presentations of patients, attending OPD. The aetiology varies from an inflammatory process to a malignant condition. Fine Needle Aspiration Cytology is simple and rapid diagnostic techniques which help in diagnosis. Aim is to evaluate the results of fine needle aspiration cytology of lymph nodes and to compare the cytological findings with histopathology.

Materials & Methods: It is a retrospective study from January 2005-December 2017. Patient demographic profiles were retrieved from archives of clinical files. The cytological smears were retrieved and re-assessed. The lesions are categorised as reactive lymphadenitis, granulomatous lesions, necrotising lymphadenitis, suppurative lymphadenitis, lymphoma and metastatic. Histopathological correlation done when available.

Results: A total of 3676 cases of lymph node FNAC were found during the study period which constituted about 16% of all FNAC. M: F ratio is 0.8:1. Maximum number of cases was in the age group of 21-30 yrs (24.7%). Granulomatous lesions were most common (40%) followed by reactive lymphadenitis (39%). Lymphoma and metastatic tumours constituted 2.6% and 13% respectively. FNAC is having high specificity and sensitivity for both neoplastic and non neoplastic lesions.

Conclusion: FNAC of lymph nodes proved to be useful tool in diagnosing both neoplastic and non-neoplastic lesions. It helps the surgeon and physician in better patient management.

Keywords: FNAC, Reactive, Granulomatous, Lymphoma, Metastatic
Abstract No: OP 18

Title: Cytological grading systems of breast cancer interobserver assessment

Authors: Dr Gowthami N, Dr Ashwini HN, Dr Nagaraj TS, Dr S.B.Patil, Dr K.S.Rajashekar

Designation of Presenting Author: Post Graduate student

Institution: JJJM Medical College, Davangere

Email Id & Mobile No of presenting Author: gowthaminarayan23@gmail.com, 9449055099

Abstract

Background & Aims: In developing countries, diagnosis of breast carcinoma is still made on fine needle aspiration cytology (FNAC). For the resource poor settings, FNAC is cheaper, less invasive and can sample different areas of the lesion. Cytological grading of the smears can provide valuable prognostic information and aid in planning the management options. Aim of study to assess interobserver agreement in cytological grading of carcinoma breast through 3 different grading systems.

Materials & Methods: A total of 59 carcinoma breast FNAC (H&E, Giemsa and pap stained) smears were studied and graded independently by two pathologists. The cytological features were graded according to Robinson's method, Scarff-Bloom-Richardson (SBR) grading system and grading systems proposed by Khan et al.

Results: FNAC of 59 cases of breast carcinoma were studied. Majority of cases were grade (3). The interobserver agreement was analysed by Kappa measurement of agreement. All the three grading systems showed interobserver agreement. Robinsons showed highest concordance (51 out of 59 cases 86.40% kappa value = 0.73) of grading among two pathologist followed by SBR and Khans.

Conclusion: Cytological grading of breast carcinoma is feasible and provides valuable prognostic information. Hence we propose this to be included in FNAC report of breast malignancies. In present study Robinson's method of cytological grading in fine needle aspiration smears of breast carcinoma is simpler, objective and easily reproducible, hence being preferable for routine use.

Key Words: FNAC, Breast carcinoma, Cytological grading

Abstract No: OP 41

Title: A Retrospective study of Fine Needle Aspiration Cytology in Metastatic Lymph Nodes.

Authors: Dr Indudhara P.B

Designation of Presenting Author: Associate professor

Institution: Subbaiah Institute of Medical Sciences, Shimoga.

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Abstract:

Background & Aims: Fine needle aspiration cytology (FNAC) is a reliable, outpatient based, an inexpensive diagnostic method. It is suitable for the developing countries for the diagnosis of lymphadenopathy at any approachable site. Fine needle aspiration cytology is helpful in detecting the presence of metastatic disease and also, gives the clue regarding the origin of the primary tumor, prognosis as well in the management of patient for staging purposes. The aim of the study was to detect and diagnose metastasis in lymph nodes.

Materials & Methods: A retrospective study was done of all lymphnodes with metastasis, reported in Department of Pathology, Subbaiah Institute of Medical sciences, Shimoga.

Results: Cytology results were positive for metastasis in 30 specimens. Cervical lymphnodes were commonly affected. More number of cases were detected in the late middle age life (40-50 yrs). There were 21 males and 09 females with a male predominance (Male:Female = 2.3:1). Squamous cell carcinoma was most commonly detected malignancy, accounting for 68% of cases. Correlation with histopathology was done in 12 cases and FNAC correlation was 100%.

Conclusions: Fine needle aspiration cytology of lymphadenopathy is a useful tool in diagnosing metastatic lesions with good certainty, at times with the detection of the primary site.

Key words: FNAC, Metastatic lymph node, Squamous cell carcinoma
Abstract No: OP 42

Title: Fine Needle Aspiration Cytology Study of Lymph Node Lesions

Authors: Dr. Mahesh S Patil

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Abstract

Background and Aims: Lymphadenopathy is one of the commonest clinical presentation with varied etiologies, & one of the major causes of morbidity. FNAC has gained immense popularity among all the diagnostic modalities and has a well established role in the evaluation of lymphadenopathy. Aim is to determine the efficacy of FNAC and to study the spectrum of lesions with respective age, sex and site predilection.

Materials & Methods: In this prospective study, over a period of 2 years, 252 number of patients underwent FNA of lymph nodes.

Results: Maximum cases were in the age group of 11-20 years. There was a male preponderance of cases. Benign lymphadenopathies were diagnosed in 77.16 % and malignant lymphadenopathies to 18.24%. In the benign category, reactive lymphadenitis (41%) tuberculous lymphadenitis (32.14 %) and acute Suppurative lymphadenitis (3.96 %) diagnosed.. In malignant category, metastatic deposits often involving the LN was, SCC accounting to 69.23 %. Seven cases diagnosed as primary malignancies of the LN, where 71.41% accounted to Hodgkin’s and 28.57% to NHL.34 out of 36 cases had good histopathological correlation. The efficacy, sensitivity and specificity of FNAC in diagnosing lymph node lesions in the present study was, 96.4 %, 91.3 % and 86.6 % respectively. Rare and interesting cases of filarial infestation metastatic SCC associated with microfilaria, metastatic SCC with tuberculosis and leukemic infiltration of cervical node.

Conclusion: FNAC helps the clinician to confirm and exclude the clinical diagnosis and to further plan for the treatment. Our results, clearly demonstrate the use of FNAC on lymph node lesions an easy, safe and reliable method of establishing the diagnosis of various lesions.

Key Words: FNAC, Lymph nodes
An attempt to study the evolution of living organisms without reference to cytology would be as futile as an account of stellar evolution which ignored spectroscopy. ~John Burdon Sanderson Haldane

Thank You From All of Us
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