
INTRA-OPERATIVE CONSULTATION

AN INTRODUCTION

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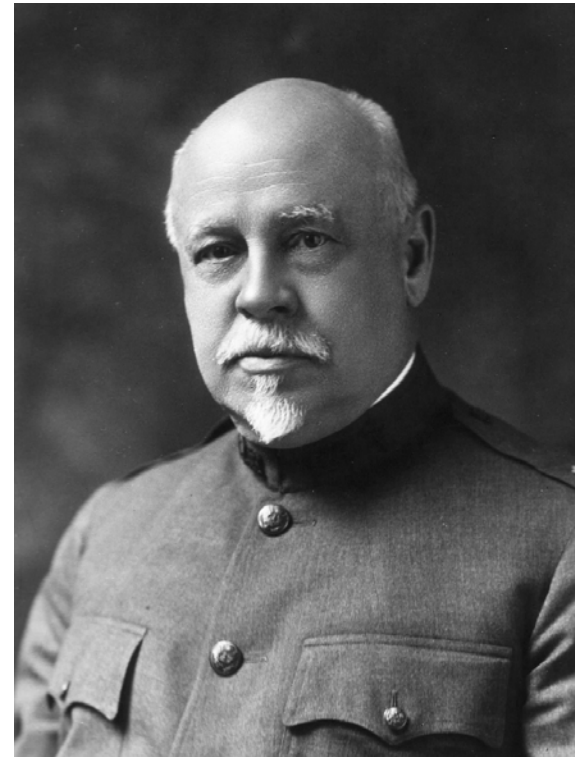
Road map

- History
- Types of IOC
- Work flow of IOC on ground
- Indications
- Communication
- TAT (Turn-Around-Time)
- Accuracy of IOC
- Errors and Pitfalls



Looking back in time...

- 1891- Dr William Welch
- Johns Hopkins
- Freezing microtome



Pioneers

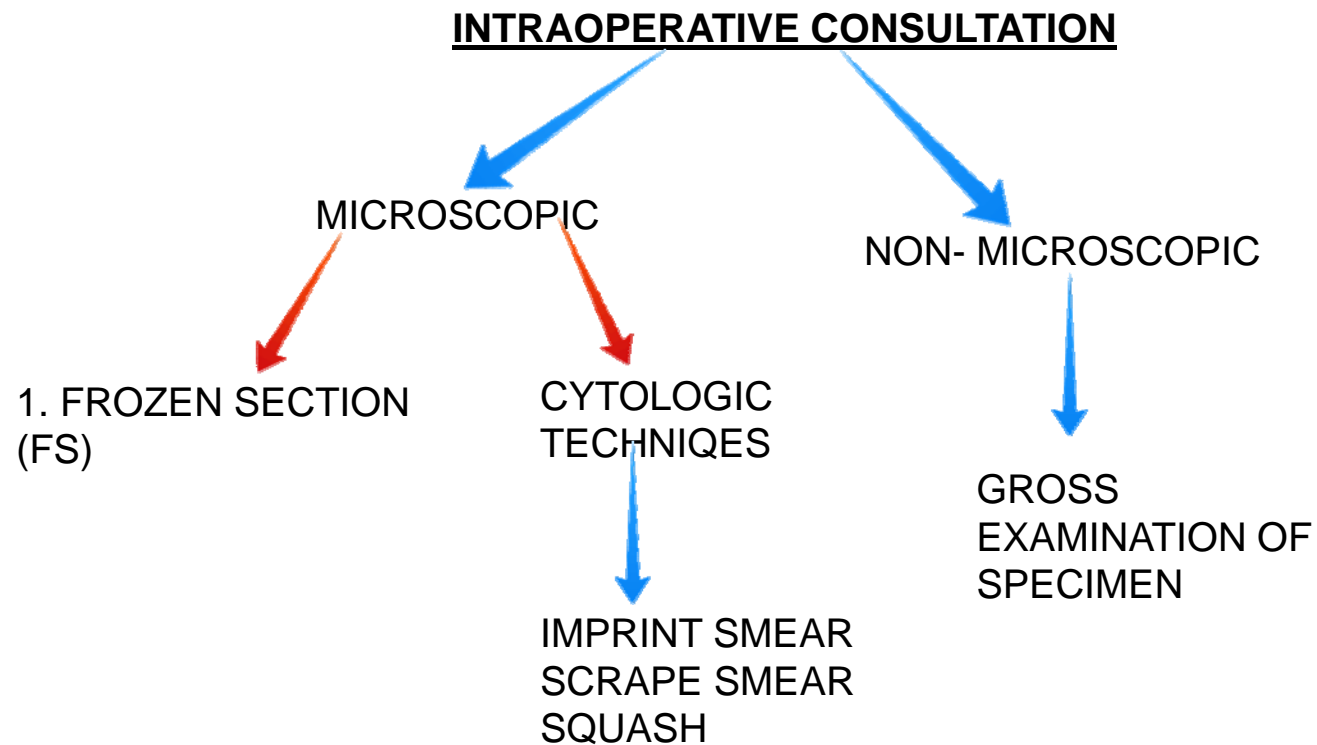
- 1905- Dr Louis B Wilson of Mayo clinic
- Developed rapid frozen section using automatic freezing microtome and staining with methylene blue



Figure 1. Louis B. Wilson, MD, examining a specimen with the microscope. Photograph used with permission of the Mayo Foundation, Rochester, Minn.



Types of IOC



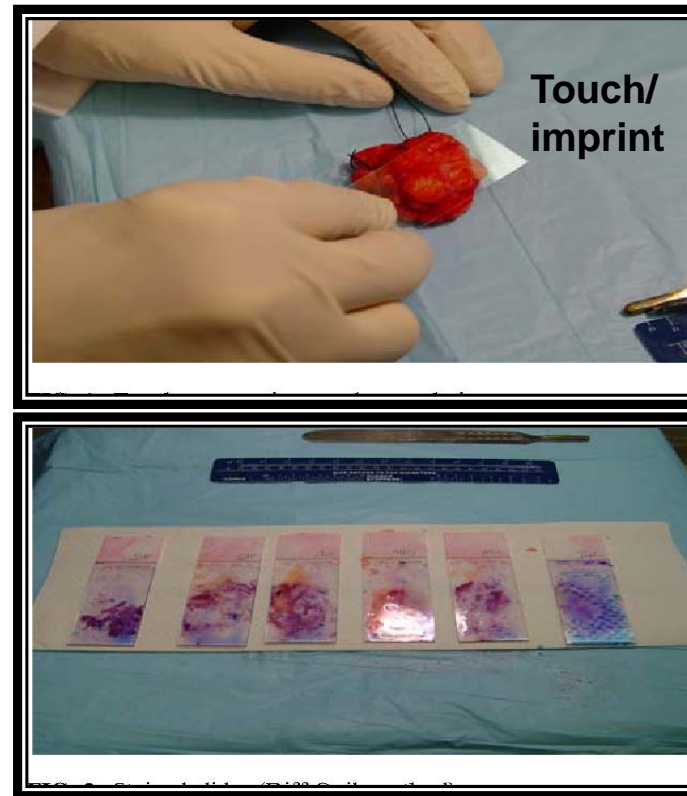
Gross examination of Specimen



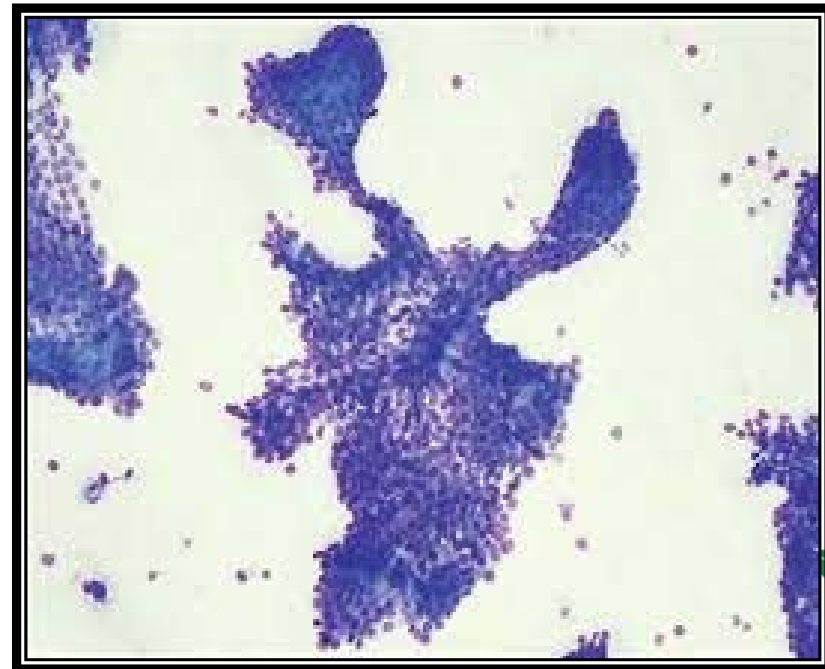
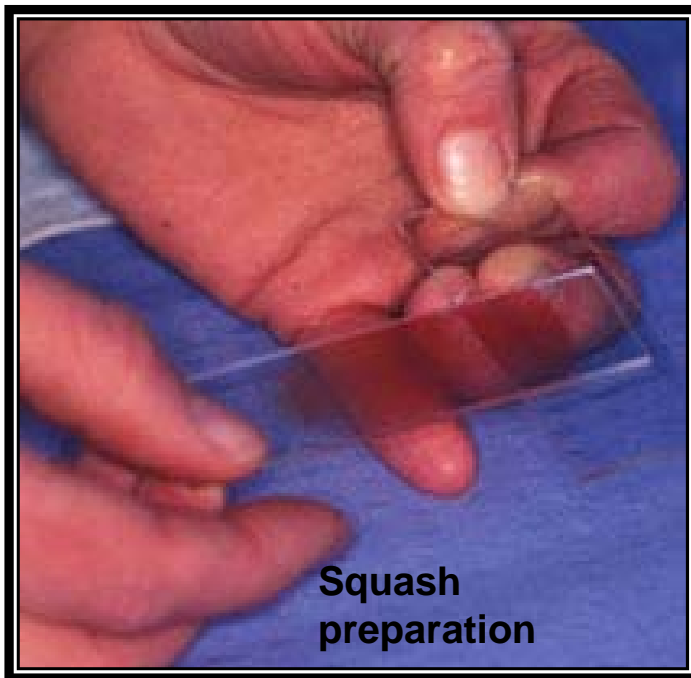
Various sized nodules, some incompletely encapsulated, secondary hemorrhage, necrosis, cystic degeneration



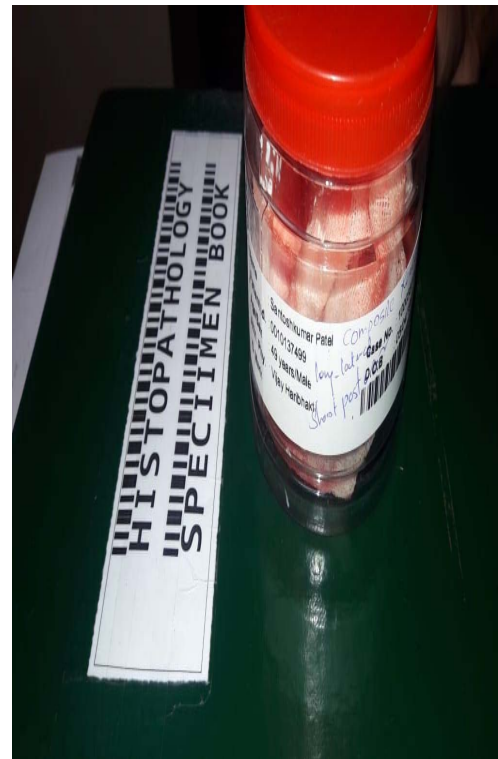
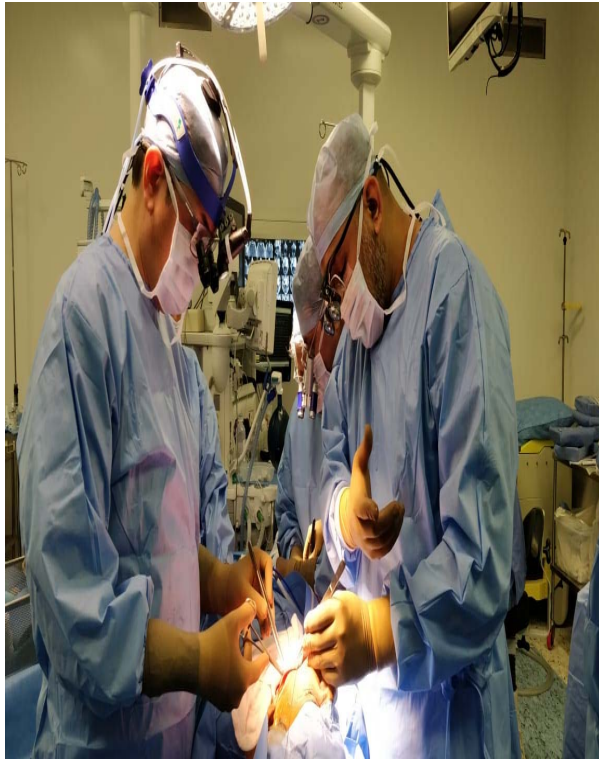
Cytologic techniques



Cytologic techniques



FS- how is it done on ground?



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INTRA-OPERATIVE / FROZEN SECTION TEST REQUISITION FORM

Patient Reg No./GPO: _____
Referring Doctor: _____
Dr. Contact No: _____
Collection Date: _____
Collection Time: _____

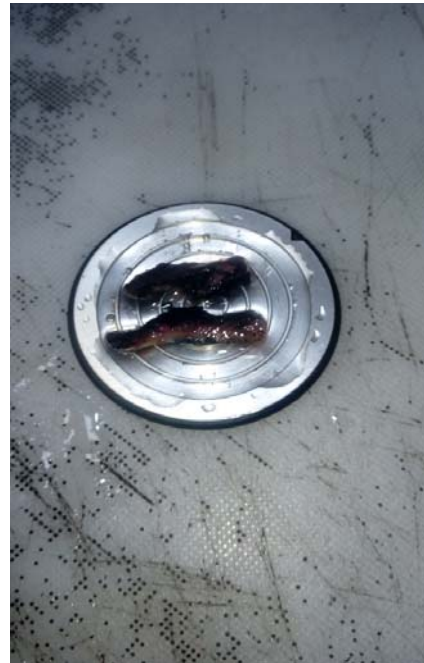
Specimen Site: BM + ENT OT No.: 2
Surgical Procedure: Composite Resect + SND + FOF
Site Orientation: _____

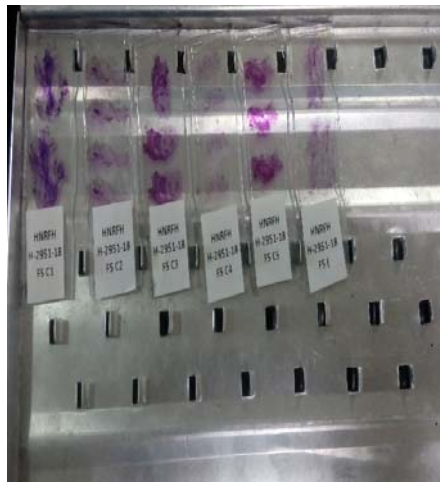
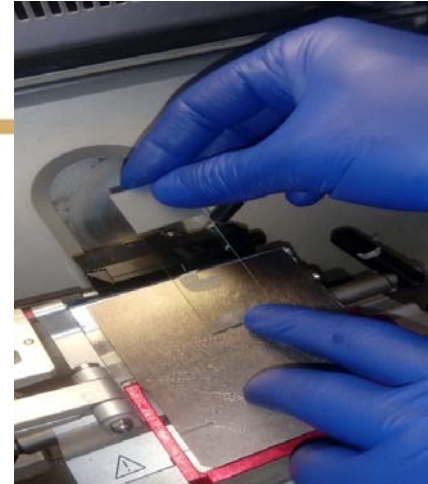
Composite Resect
 BM + ENT

Final Diagnosis: SCC Previous HP Report, if Any: outside biopsy - MDCC
Histological Details: H/O Radiological Findings: _____
Significant Lab Findings: _____
Requested By: Dr. V. Hanthaleck Sign: S. Sankar
LABMED/009/sep-16 Page 1 of 1



FS- how is it done on ground?





FS - Indications

- Rendering an initial diagnosis
- To evaluate the adequacy of margins
- Staging of malignant neoplasm
- To evaluate the adequacy of incisional biopsy



FS - Indications

- Rendering an “Initial Diagnosis”
 - ➔ Lesion not accessible or amenable to preop biopsy
 - ➔ Unsuccessful preop biopsy
 - ➔ Unexpected findings in surgery



FS - Indications

- To evaluate the adequacy of margin
-head and neck specimens
- To stage malignant neoplasms
- To confirm that sufficient tissue is present for diagnosis



Inappropriate FS

- 5% of FS is inappropriate /ambiguous
 - Am J Clin Pathol 104:294-298, 1995
 - To satisfy CURIOSITY of the Surgeon.
 - To compensate for inadequate pre-op evaluation.
 - Tool to convey quick information to the Patient's family.
- THERE SHOULD BE A VALID REASON FOR FS REQUEST.



What the pathologist should know before FS

1. Request form with brief history, clinico-radiological findings
2. What surgeon wants to know- specific question?
3. What have they sent?
4. How to contact them?

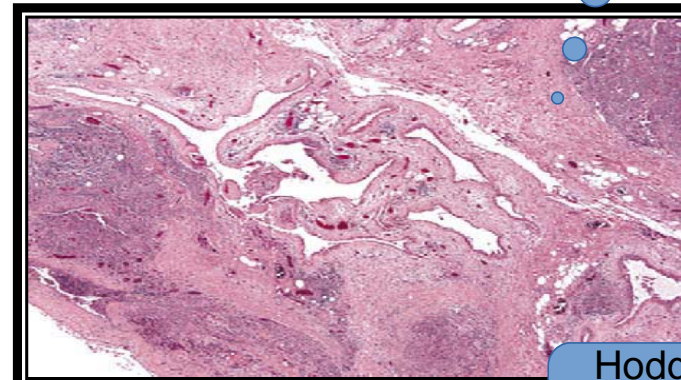
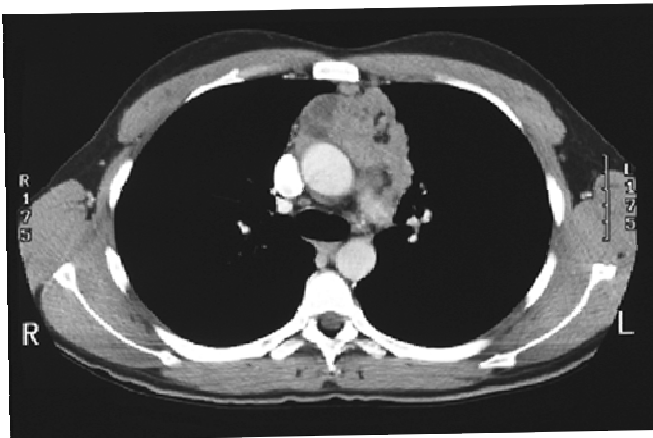


Clinicopathologic correlation..

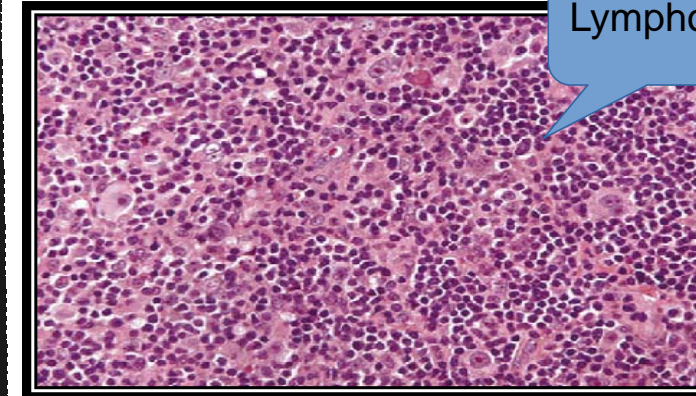
Benign
Cyst of
Thymus

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- 14.8% of the diagnostic errors
- lack of pertinent clinical information



Hodgkin
Lymphoma



WRONG DIAGNOSIS



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CONFUSING DIFFERENTIAL DIAGNOSIS



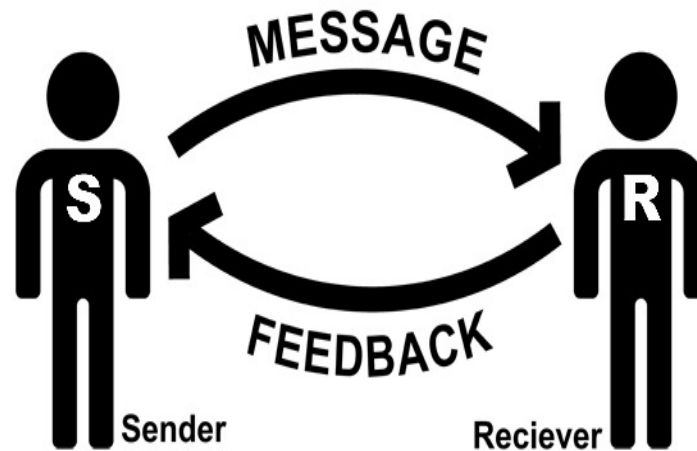
During frozen section

1. GROSSING & SAMPLING IS EVERYTHING- tissue selection and representative area from organ/tissue
2. Document - record all appropriate characteristics of the specimen
3. Reading of slides
 - ◆ Time



Communicating to the Surgeon

- Confirm identity of surgeon
- Confirm identity of the patient
- The diagnosis is conveyed to the surgeon
- Same is repeated by the surgeon



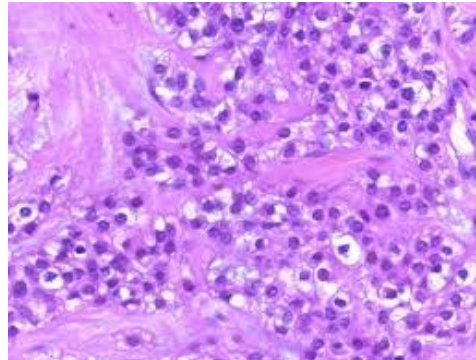
Communicating to the Surgeon



- Clear , concise and unambiguous
- Written and signed FS report with date and time should follow.



Communicating to the Surgeon



→ Managerial Diagnosis

→ Low grade clear cell carcinoma

→ Pathological diagnosis

- Low grade
- Clear cell Mucoepidermoid ca
- Clear cell acinic cell ca
- Clear cell adenomyoepithelial ca



Turn Around Time CAP recommendations

- Single uncomplicated FS is 20 minutes(single block from a single specimen)
- Cytologic imprint or smear within 15 minutes.
- Gross examination only in 10-15 minutes.

Ref: CAP quality improvement programmes QProbe study



Factors that Increase TAT

- Technical issues / instrument malfunction
- More than one pathologist involved
- When a second opinion is sought
- Review of previous material
- Lack of adequate clinical details



Errors/ Limitations

- Sampling error (44.8%)
- Technical error (12.7%)
- Interpretative error (40%)



Sampling error

Gross sampling error

- Poor sampling of tissue by the surgeon
- Poor selection of appropriate tissue after grossing

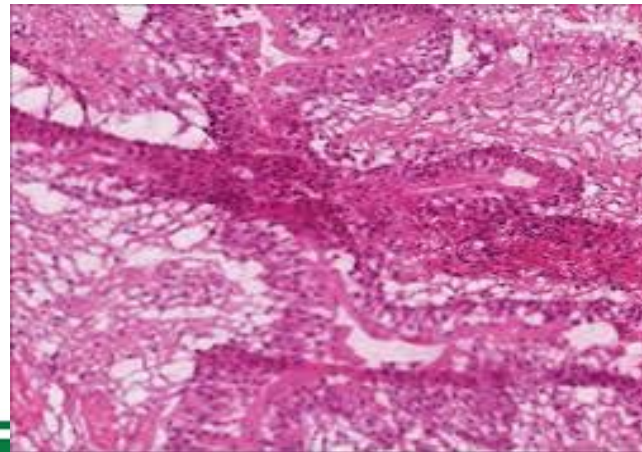
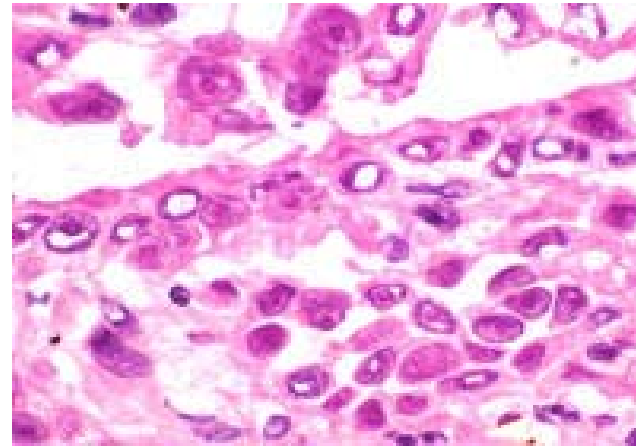


Technical problems

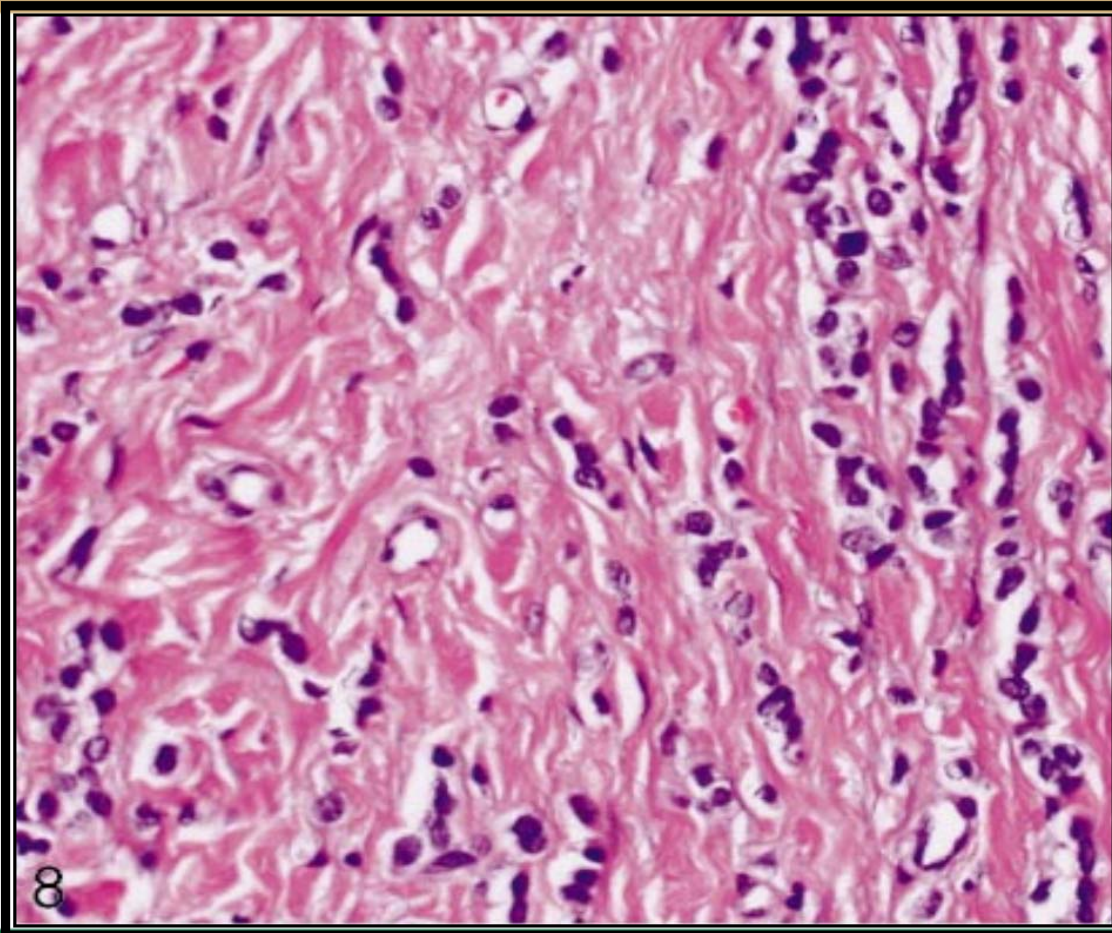
Freezing (ice
crystal) artefact

Poor quality section

Poorly stained
section



Interpretative errors



40% of the errors



Accuracy (FS)

- Highly reliable
- Accurate diagnosis made in 92-95% of cases
- Mayo clinic- 97.8% accuracy rate(24, 480 cases)



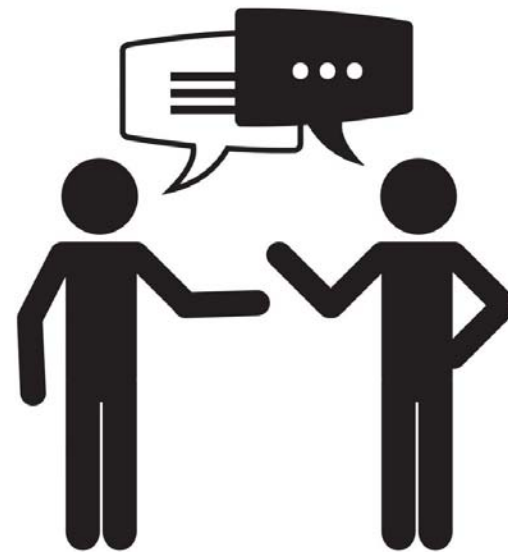
Accuracy of FS

- Dependent on anatomic site
- CNS lesion-94%,gynaecological cases-97.5%
- head and neck-98.3%(DiNardo et al.)
- thyroid lesions->90%, but can drop to 17% for encapsulated follicular lesions
- Regular self-audits will improve accuracy.
- All pathology labs maintain a register which documents both FS and permanent diagnosis



Intraoperative “CONSULTATION”

- Dialogue
- Two equal parties
- Constructive discussion
- Management of the case
- Overall patient benefit



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Pathologist <---> Surgeon

- Lack of soft skill can ruin a relationship.
- Mutually respectful professional discussions.
- Suggestions should be constructive.
- Understanding each others view point can eliminate much heart burn.



“ Don’t judge someone
before
you walk a mile in his mocassins.”

An American-Indian proverb



Pathologist



Surgeon



