“Atypia” in Diagnostic Cytopathology: Strategies to Reduce Overuse A CQI initiative

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Objectives

- Review cytology literature on standardization of “Atypia” as a diagnostic term
- Address the clinical impact of “Atypia” in cytopathology diagnosis
- Discuss in-house strategies to reduce your rate of “Atypia” diagnosis
- Share approaches we have taken to limit “Atypia” diagnosis in pancreatic FNABs – LHSC experience – Susan McRae

Atypia/Atypical in Cytopathology Background

- Atypia - Greek language
  - ατυπός meaning without type or a condition of being irregular or nonstandard
- “Atypia” was first introduced by George Papanicolaou to convey a very low suspicion of (pre) malignancy
  - Papanicolaou Class 11 findings - Gyn cytology
  - Survived in The Bethesda System terminology for cervical cytology
Atypia
Current Status in GYN Cytology

- Atypical Squamous Cells (ASC-US, ASC-H)
- Atypical Glandular Cells (endocervical, endometrial, NOS)
- Definitions clear, Atlas available
  - ASCUS/SIL ratio – performance indicator
  - Accepted rate (<3:1)
- Management guidelines available
  - ASC-US – repeat X 6 &12 mos (Ontario) OR HPV, Colp
  - ASC-H – colposcopy
  - AGUS – depends on cell type, age

Atypia
Current Status

- The Bethesda System for Thyroid Cytopathology (2010)
  - AUS/FLUS: Criteria defined (multiple scenarios, heterogeneous category), risk of malignancy (5-15%), recommendation (repeat FNA)
  - Expected frequency (7%) of all thyroid FNAs

Performance indicator

Dr. Jeffrey Krane, Ritu Nair and Andrew Renshaw

Atypia
Current Status in Non- Gyn Cytology

Papanicolaou Society of Cytopathology Guidelines:
Pancreaticobiliary Cytology 2014
- The category of atypical should only be applied when there are cells present with cytoplasmic, nuclear, or architectural features that are not consistent with normal or reactive cellular changes of the pancreas or bile ducts, and are insufficient to classify them as a neoplasm or suspicious for a high-grade malignancy. The findings are insufficient to establish an abnormality explaining the lesion seen on imaging. Follow-up evaluation is warranted
- Heterogeneous category, multiple scenarios

Atypia
Current Status in Non–Gyn Cytology

- The Paris System for Urine Cytology - coming soon
- Diagnostic criteria will be evidence based, and tested for reproducibility
- Upcoming atlas

Atypia in Other Non Gyn Cytology
Clinical Impact

- Normal
- Premalignant or malignant
- Grey zone, when diagnosis is uncertain
- Some thing unusual (not necessarily bad)
- Do not conform to our expectation of normality
- Other scenarios
  - Create our own definitions, vague and ambiguous
  - Personality /emotional elements, style of pathologist
  - Attitude towards diagnoses and consequences
  - Fear of litigation
  - Sign out time of the day

Create confusion for clinicians

Atypia
How to Avoid Misuse (ASC)

We Need
- Narrow definitions with clear inclusion and exclusion criteria
- Quantitative criteria (nuclear size, chromatin)
- Agreed upon reference images (well illustrated atlas)
- Known likely hood ratio of (pre)malignancy
  - Aim for low risk of malignancy
- Clear and agreed up on clinical significance of diagnoses
- Well defined management options
Atypia: In-house Strategies to Reduce Overuse

- **Continuous evaluation** of atypia diagnoses: in-house QA monitoring
  - Gyn cytology
  - FNAB: Thyroid, EBUS, EUS
  - Urine cytology
- Use **stringent adequacy criteria**
  - Low cellularity, degeneration, artifact (classify sample as non-diagnostic or suboptimal)
- Institute **ROSE** as a QA intervention to improve quality and quantity as needed

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Atypia: In-house Strategies to Reduce Overuse

- Continuously **train cytology professionals** on criteria and clinical impact
- Focus on atypia and other grey areas during **in house CE activities**
  - Multihead microscope rounds
  - Multidisciplinary rounds - educate clinicians
  - Internal consultation
  - Reduce inter-observer variability

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Atypia/Atypical Take Home Message

- Atypia as a diagnostic category is unavoidable, the term will **continue** in cytopathology vocabulary
- Keep it as low as possible, **tighten the usage** by effective in-house strategies
- If used, **give reasons clearly in a well crafted report** and discuss the diagnostic and management implications
Pancreas EUS-FNAB
An Analysis Of Equivocal Results
The London Experience
Presented at CAP meeting, July 2014, Toronto

Objectives

- Examine the frequency and reasons for equivocal diagnoses in EUS-FNAB of solid pancreatic lesions.
- Assess surgical outcome and neoplastic risk for equivocal diagnoses.
- Develop additional in house strategies to reduce equivocal diagnoses.

LHSC Clinical and Cytologic Data (2004-2013)

- 574 total pancreatic EUS-FNAB performed
- 414 were solid lesions
  (160 cystic lesions excluded)
- 191 (46%) had equivocal diagnosis
- 87 (46%) had surgical follow-up
  - 2 gastroenterologists
  - 8 cytopathologists
  - 13 pathologists
The frequency of AT diagnosis (24%) is higher than reported in the literature (1-14%).

The main reasons for equivocal diagnoses are related to suboptimal lesional material and GI contamination.

GI contaminant with rare atypia (slight nuclear variation, crowding and nucleoli) was the commonest cause.
Adenocarcinoma was the most common cell type (63%).

# of passes at ROSE for equivocal cases is higher than for positive and neoplastic cases, as predicted. Our clinicians appropriately use ROSE to obtain further passes in suboptimal cellularity cases.

Internal consultation was performed in nearly 50% of equivocal cases.

Internal consultation is high in our practice for pancreas cases compared to other body sites.

Pocrich CT, Weir MM. Examination of Cytopathology Intradepartmental Consultation practice. Poster presentation at CAP 2013.
Ongoing In-house Strategies at LHSC

- Redefined diagnostic terminology to reflect newly published Papanicolaou Society of Cytopathology Guidelines for Pancreatico-biliary Cytology - Dr. Weir
- Educated cytology professionals (cytotechns, pathologists) and GEs on new terminology
- Communicate neoplastic risk to clinicians for equivocal categories.
- Continue internal consultation (CTs and pathologists)
- Discuss equivocal cases at EUS-FNAB monthly multidisciplinary rounds.
- Continue ROSE on all cases and evaluate impact of sampling technique and ROSE.
- Re-evaluate equivocal diagnostic category in 2-3 years time

Thank You