

ULTRASOUND GUIDED FINE NEEDLE  
THYROID BIOPSIES:  
UNSATISFACTORY FOR PATHOLOGICAL  
ASSESSMENT RATE

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# DISCLOSURE

- None

# BACKGROUND

- Thyroid nodules common.
  - Incidence ~10-41 % on ultrasound.
- Fine needle thyroid biopsy (FNTB) plays essential role in management of thyroid nodules.
  - Cost effective and accurate.
  - Ultrasound (US) guided FNTB decreases unsatisfactory rate when compared to palpation FNTB.

# BACKGROUND

- Bethesda Classification:
  - Satisfactory if  $\geq 6$  groups of benign follicular cells with each group composed of  $\geq 10$  cells.
- Sample may be considered unsatisfactory for pathological assessment if:
  - Inadequate cells.
  - Overly thick smears.
  - Obscuring blood.
  - Air drying of EtOH fixed slides.

# BACKGROUND

- Low unsatisfactory rate decreases need for repeat FNTB, decreasing diagnostic conundrums and costs.
- Various techniques may be used to decrease unsatisfactory rate:
  - Modify procedure technique (needle gauge, # passes).
  - Increasing volume of cases.
  - Modifying slide preparation.

# TRIGGERS FOR AUDIT

- Exposure to multiple FNAB techniques in PGY-1:
  - Palpation FNTB by pathologists.
  - General surgeons – US and palpation.
  - Radiologists with and without onsite cytotechs.
- With many FNTB cases being referred to radiology, were we meeting established literature standards for unsatisfactory for pathological assessment rates?

# STANDARD

- Unsatisfactory for pathological assessment rate variable in literature.
  - Average ranges from 10-20 %.
- **Target for clinical audit set at < 20%.**

# METHODS

- Two tertiary care centers:
  - University of Alberta Hospital
  - Royal Alexandra Hospital
- Fifty consecutive US-guided FNTB with available pathology reports from October/November 2014 were reviewed at both sites.
  - One site with an onsite cytotech (site A) and one without (site B).
- Multiple technical factors compared.



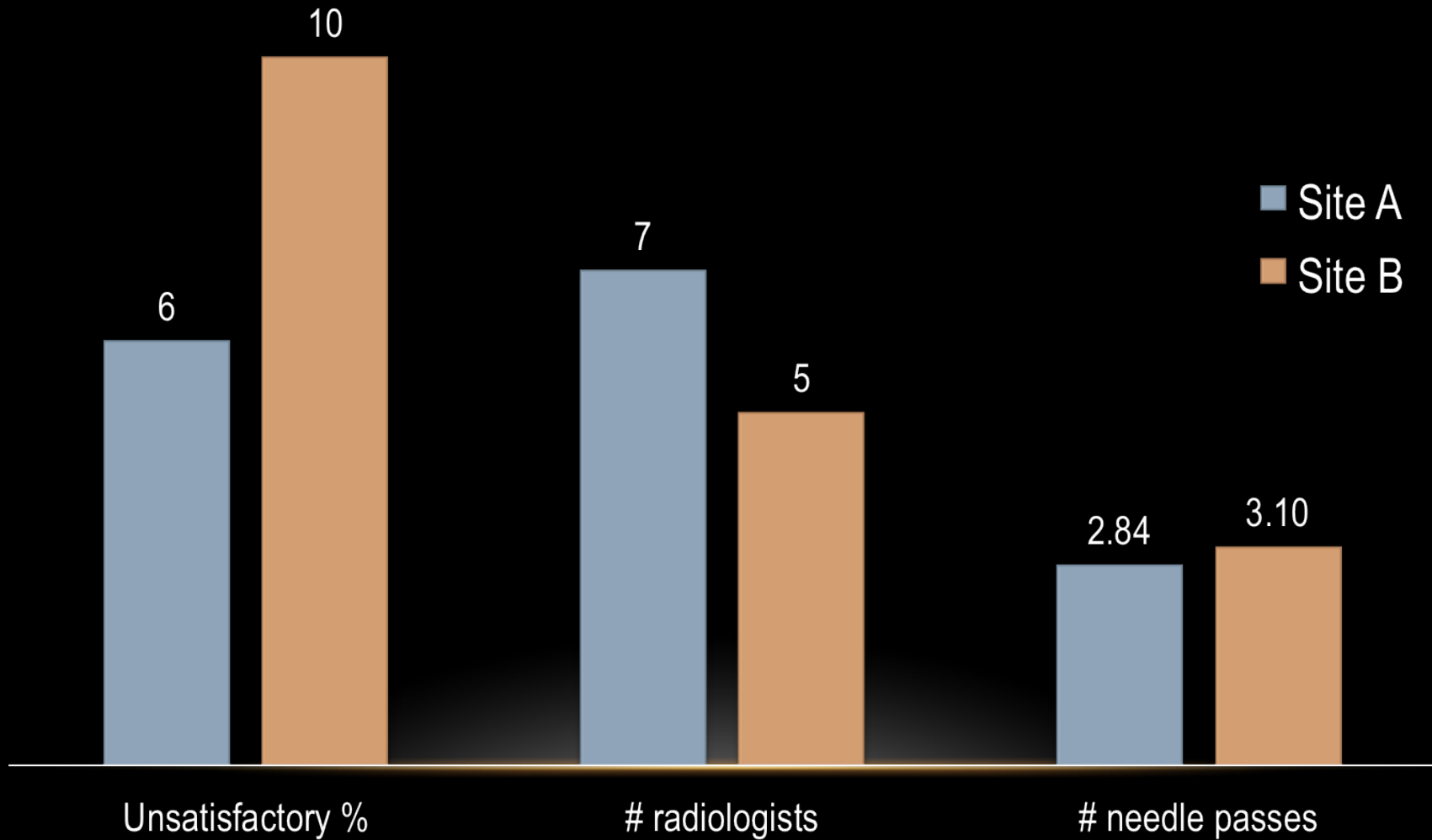
## RESULT – SITE A (with cytotech)

- Unsatisfactory rate: 6%.
- Procedures performed by 7 radiologists.
- Average # needle passes: 2.84.
- 25 gauge needle used in 86 % of procedures.
  - 4% 22 gauge needle, 10% unreported.

## RESULT – SITE B (without cytotech)

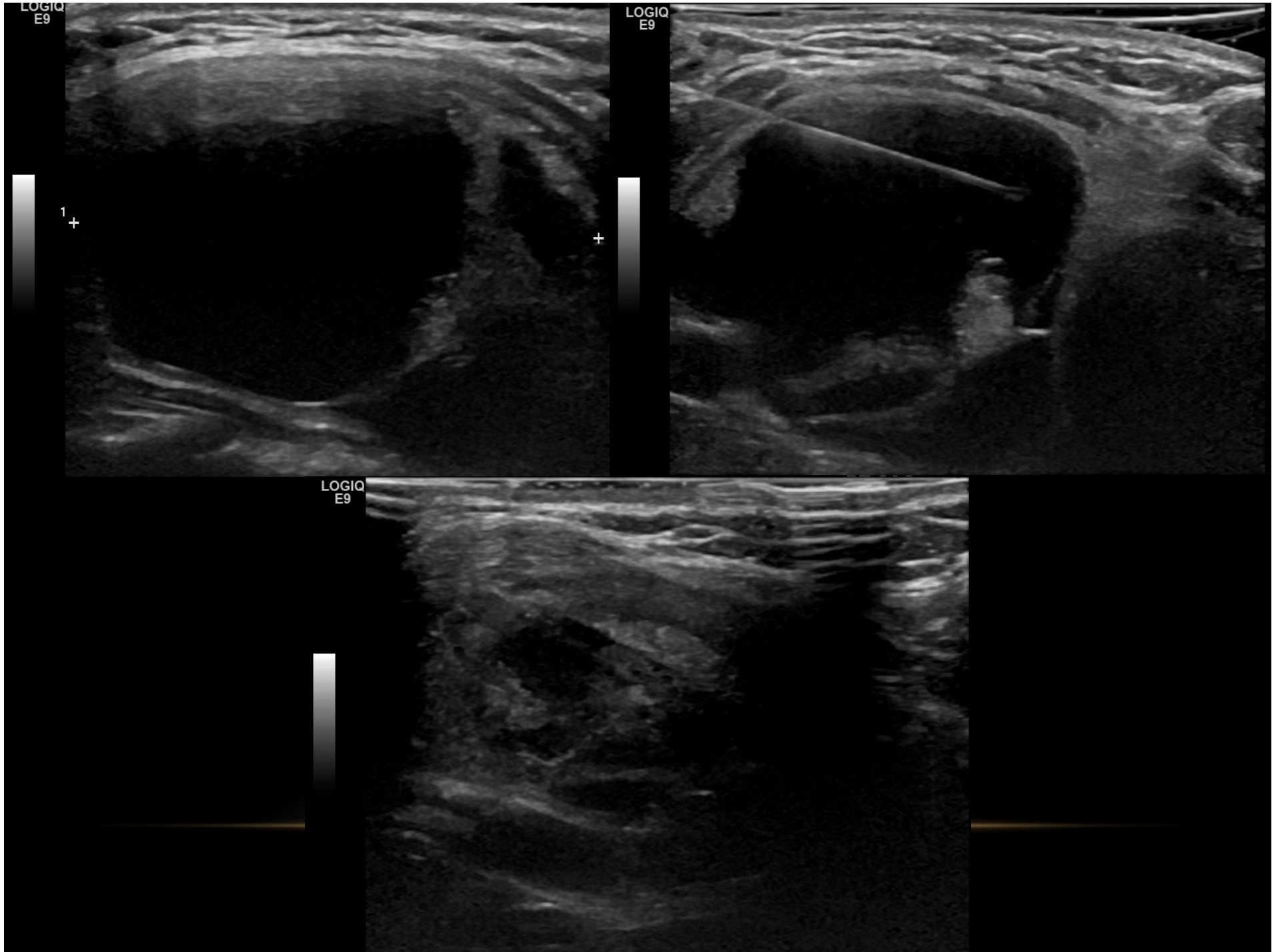
- Unsatisfactory rate: **10 %**.
- Procedures performed by 5 radiologists.
- Average # needle passes: 3.10.
- 25 gauge needle used in 100% of procedures.

## Comparison of unsatisfactory rates, performing radiologists and average number of needle passes from both sites



# RESULTS

- Target met at both sites.
- Possible factors contributing to target being achieved include:
  - Appropriate technique.
  - Large volume cases.
- Approximate time spent on audit:
  - Data collection: ~ 7-8 hours.
  - Synthesis: ~ 2-3 hours.



# ACTION PLAN

- Presentation at the resident research day (May 25, 2015).
- Communication with the technologists and radiologists to provide positive feedback.
- Place posters in both radiology departments outlining the success.

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- Audit team:
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