Rapid On-site Evaluation of Ultrasound Guided Fine Needle Aspiration Thyroid Nodule Biopsy: Does it Have a Role in the Reduction of Non-diagnostic Sample Rate?

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Background

- Thyroid nodules are one of the most common incidental imaging findings
- US guided FNA is used for tissue sampling
- FNAs are increasing due to increasing find of thyroid nodules

Ultrasound guided outpatient FNA
Needle FNA in suspicious nodule
Current protocol

- 6 FNA passes are obtained for each nodule
- 20-25g needle used
- Non-diagnostic specimen is possible due to inadequate passes
- Operator unsure if specimen is adequate upon completion of FNA
Aim

Detect the effect of rapid on-site evaluation on the success of obtaining adequate diagnostic samples and decreasing re-biopsy rate
Implementing rapid on-site cytological exam to check for sample adequacy

Pathology team present in room at time of biopsy with rapid stains
Methods

• Thyroid nodules FNA 2017-2018 were identified.
• Variables:
  - Sample adequacy, yes or no
  - On-site exam, yes or no
  - Nodule size
• Fisher’s exact test used to determine significance
• Small nodules ($\leq 2$ and $\leq 3$ cm) studied
Results

• 355 patients with 443 nodules were reviewed
• On-site cytological exam was performed in 60 cases (17%) with 65 nodules
• 121 patients with nodules ≤2 cm


**Nodules ≤2 cm**

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<thead>
<tr>
<th>Adequate</th>
<th>Inadequate</th>
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<tbody>
<tr>
<td>Onsite cytology performed</td>
<td>97%</td>
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<tr>
<td>Onsite cytology not performed</td>
<td>88%</td>
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RR = 0.8, p = 0.839

**Nodules ≤3 cm**

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Conclusion

• FNA biopsy of thyroid nodules is one of the most commonly performed procedures.
• Inadequate sample is frustrating for the patient, results in rebiopsy, and increases cost.
• Performing rapid on-site cytological exam, particularly in nodules less than 2 cm resulted in reduction of the incidence of obtaining inadequate sample.
• In our experience, this has led to improving the quality and safety of patient care.
Thank You!