FINE NEEDLE ASPIRATION BIOPSY- A METHOD TO DISTINGUISH BETWEEN THYROID NODULES AND PARATHYROID ADENOMAS

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Introduction
High-resolution ultrasound (US) allows the location of large parathyroid adenomas. These tumors should be however differentiated from thyroid nodules. For the confirmation of the parathyroid adenoma, we propose US-guided fine-needle aspiration biopsy (FNAB) of suspected nodules, with additional parathyroid hormone (PTH) analysis in the washout of the aspirate (PTH-FNA).

Case report
- A 51 year old woman, recent menopause onset
- history of kidney lithiasis and Pouteau-Colles and rib fractures at minimal trauma
- attended our clinic for the investigation of a multinodular goiter

Cervical ultrasound

Metabolic profile

<table>
<thead>
<tr>
<th>Normal ranges</th>
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<tbody>
<tr>
<td>Calcium</td>
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<tr>
<td>10.1 mg/dl 8.4-10.20mg/dl</td>
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<tr>
<td>Phosphate</td>
</tr>
<tr>
<td>2.7 mg/dl 2.5-4.7 mg/dl</td>
</tr>
<tr>
<td>PTH</td>
</tr>
<tr>
<td>281 pg/ml 11-67 ng/ml</td>
</tr>
<tr>
<td>25OH, &gt;30ng/ml</td>
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<tr>
<td>11.08 ng/ml</td>
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<tr>
<td>350 mg/24h 100-300mg/24h</td>
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BMD (DXA, Hologic)

- Lumbar T-score = - 3.3
- Femoral neck T-score = - 1.9
- Radial T-score = - 4.1

Low BMD of the inferior 1/3 of the radius is suggestive for Primary Hyperparathyroidism

FNAB from suspect nodule, then wash with 2 ml sterile

PTH from washed, diluted aspirate 231 pg/ml

Cervical ultrasound

Primary Hyperparathyroidism
Multinodular Goiter

Total Thyroidectomy and excision of the inferior right nodule

Parathyroid adenoma (HE)

Papillary microcarcinoma n° 1 (HE)

- Sclerotic papillary microcarcinoma n° 2 (HE)
- Sclerotic papillary microcarcinoma n° 2 (Van Gieson)

Conclusions

- PTH-FNA is a reliable and possibly a more accurate and faster method than additional imaging techniques to localize a large parathyroid adenoma in patients with concomitant thyroid nodules.

Acknowledgements

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