RECURRENT HYPERPARATHYROIDISM
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PATIENT CASE

• 74F diagnosed with primary hyperparathyroidism in 2011 on routine labs
  • Fatigue, abdominal pain, muscle weakness
  • PTH 170, Ca 10.5, Vit D 29
  • Sestamibi scan -> ?R inferior parathyroid adenoma, smaller uptake at L superior pole
  • No ultrasound reported
PATIENT CASE

- 5/12 Neck exploration-> Normal R inferior gland, superior not identified, 2 normal Left sided glands. No parathyroid glands removed.
- Post-operative PTH remained elevated
PATIENT CASE

- 7/15 labs: PTH 145, Ca 11.2, Vit D 26.2
  - Repeat sestamibi -> ?R inferior parathyroid adenoma
- 10/15 Referred to MGH

Thoughts about sestamibi scan as only localizing study?

Approach of surgeon at initial operation

Identified all 4 glands
Did not remove normal glands
Consider jugular venous sampling
PATIENT CASE

• What next?
  • Confirm diagnosis
  • Re visit surgical indications
  • Next study?
PERSISTENT HPT:

- Cure rates for initial parathyroidectomy:
  - High volume center: >95%
  - Low volume center: 85-90%
- Most common causes of failure:

Most common location for a missed adenoma is the TE groove

- Missed Adenoma
- Hyperplasia/MEN1
- Hyperplasia/Non-familial
- Carcinoma
# PREDICTORS OF DISEASE RECURRENTNESS

<table>
<thead>
<tr>
<th>Variable</th>
<th>P</th>
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<tbody>
<tr>
<td>Age</td>
<td>0.31</td>
</tr>
<tr>
<td>Female</td>
<td>0.52</td>
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<tr>
<td>Preoperative PTH</td>
<td>0.20</td>
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<tr>
<td>MIP</td>
<td>0.34</td>
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<tr>
<td>Sestamibi nonlocalizing</td>
<td>0.12</td>
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<tr>
<td><strong>Percentage decrease in IoPTH</strong></td>
<td><strong>0.03</strong></td>
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<tr>
<td>Postoperative PTH</td>
<td>&lt;0.01</td>
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<tr>
<td>No. glands removed</td>
<td>0.91</td>
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</table>
OTHER PREDICTORS OF FAILURE

• Negative or equivocal sestamibi scan (<.01)
• Low hospital volume (<.01)
• Age > 70 (p 0.02)
WHAT ELSE TO CONSIDER?

- Indications for re-operative surgery
  - No published guidelines specific to recurrent hyperparathyroidism
  - Can extrapolate indications for initial PTx but with higher threshold for operation
  - Refer to experienced endocrine surgeon
  - Cure rates exceed 95% for re-operative procedures
IMAGING

• Best combination of studies for recurrent disease has not been determined

• 4D CT
  • >94% sensitive and 96% specific (Kutler 2011)
  • For n=45 reoperative pts it had 88% sensitivity compared to 54% for sestamibi and 21% for US (Carling 2012)
RE-EXPLORATION

- Increased risk of nerve injury due to scarring and distorted anatomy (nerve monitor)

- Re-exploration of the neck mostly demonstrates glands that are either in eutopic positions and ectopic positions that are readily accessible.

- Do not re-explore without definite imaging
CASE RESOLUTION

- **11/06/15** Parathyroidectomy with focal exploration of R side using intraoperative nerve monitoring
  - Found a large parathyroid adenoma that spanned from the sternal notch to where the recurrent laryngeal nerve inserted into the larynx
  - PTH prior to procedure: 272
  - After procedure: 25
- **11/19/15** PTH: 10
REFERENCES:


