Co-existent Macro-prolactinoma, Raised Free T4 and Right Sided Facial Nerve Palsy

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Case:
- 47 year old ♀
- 3 day history of headache and vomiting
- Right facial paraesthesia and droop
- No ‘endocrine’ symptoms

O/E:
- Right lower motor neurone facial nerve falsy - Bell’s sign
- Visual fields normal to confrontation

Investigations:
- CT head: 4.7 x 3.3 x 3.9cm enhancing lesion extending superiorly from the pituitary. Appearances are in keeping with a pituitary macroadenoma. Opacification of the right middle ear and mastoid air cells. Mass compressing facial nerve in the facial canal.

<table>
<thead>
<tr>
<th>9am bloods</th>
<th>Value</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prolactin</td>
<td>95570 miu/L</td>
<td>50 - 400</td>
</tr>
<tr>
<td>LH</td>
<td>1 iu/L</td>
<td>1 - 9</td>
</tr>
<tr>
<td>FSH</td>
<td>1.1 iu/L</td>
<td>1 - 10</td>
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<tr>
<td>Testosterone</td>
<td>0.8 nmol/L</td>
<td>9.4 - 37</td>
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<tr>
<td>TSH</td>
<td>3.2 miu/L</td>
<td>0.3 - 5</td>
</tr>
<tr>
<td>fT4</td>
<td>118.9 pmol/L</td>
<td>9 - 25</td>
</tr>
<tr>
<td>Cortisol</td>
<td>428 nmol/L</td>
<td></td>
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</tbody>
</table>

Discussion:
- Macroprolactinoma - started cabergoline
- Possibility of co-secretion of TSH but no thyrotoxic symptoms - what can the cause of these results be?
- What about the low testosterone?
- What is the link between the middle ear glomus tumour and pituitary mass?

Conclusion:
- The tumour was not co-secreting TSH. Most patients get low molecular weight heparin as an inpatient and this interferes with the assay by activating endothelial lipoprotein lipase producing non-esterified fatty acids. This competes with the binding site for T4 on TBG/albumin during the assay creating a falsely raised fT4. Get around this by using another assay or re-checking TFTs once off heparin.
- Low testosterone will improve once prolactin reduces. No need to treat low testosterone
- Link between glomus tumour and pituitary tumour could be succinate dehydrogenase gene mutation. Currently begin investigated by the Ear, Nose and Throat team.