Severe Juvenile Hypertrophy of the Breast with Hypercalcaemia; Mastectomy v’s Reduction Surgery

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Mastectomy v’s Reduction Surgery

- Total bilateral mastectomy as a surgical intervention has been reported as the preferred course of action for severe juvenile hypertrophy. The reported rate of recurrence following reduction surgery is significant.1,2
- In considering the ethical dilemma in this case the patient’s severe autism and learning difficulties were considered, as was the likelihood of breastfeeding in the future.
- Both parents were adamant that no breast tissue be left behind for fear of recurrence.

Hypercalcaemia

- The hypercalcaemia resolved following a period of hyperhydration (graph 1). Possible causes of hypercalcaemia included fat tissue necrosis in view of tissue breakdown, or Parathyroid Hormone related Peptide (PTHrP).
- PTHrP was 2.0 pmol/L (< 1.8). Hypercalcaemia with raised PTHrP has been reported before in relation to breast hypertrophy.3 As well as in relation to humoral hypercalcaemia of cancer.4
- Parathyroid hormone was suppressed at < 1.2 pmol/L, ruling out hyperparathyroidism.

Case Presentation

A 10 yr old female with autism and learning difficulties presented with rapidly progressive asymmetrical breast development during accelerated cadence through puberty. She exhibited increasing behavioural difficulties and anxiety thought to be associated with discomfort and significant hypercalcaemia. There was a strong family history of breast cancer.

Conclusions

- Juvenile breast hypertrophy can be massively debilitating and disturbing for young people and their families.5
- Surgical intervention is indicated for juvenile breast hypertrophy to the extent represented in this case. Total mastectomy was the preferred option with an excellent outcome.
- PTHrP has become a useful diagnostic tool in the differential diagnosis of hypercalcaemia.6

Bibliography and References


Table 1: Relevant Investigations

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ca</td>
<td>2.30</td>
<td>Elevated</td>
</tr>
<tr>
<td>PTHrP</td>
<td>&lt; 1.8</td>
<td>Normal</td>
</tr>
<tr>
<td>PTH</td>
<td>&lt; 1.2</td>
<td>Normal</td>
</tr>
<tr>
<td>IGFBP-3</td>
<td>1.5 mg/L</td>
<td>Normal</td>
</tr>
<tr>
<td>MRI Pelvis</td>
<td>Normal</td>
<td>Not contributory</td>
</tr>
<tr>
<td>Breast USS</td>
<td>Hyperstimulated breast tissue</td>
<td>No abscess or malignant features</td>
</tr>
</tbody>
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Graph 1: Resolution of Hypercalcaemia

April - Sept. 2015

Rapid cadence through puberty with progressive asymmetrical breast development.

Feb 2016

She had an uncomplicated recovery and was discharged home with simple analgesia. Gonapeptyl and Tamoxifen were stopped.

March 2016

A serum sample for PTHrP was taken to investigate the aetiology of hypercalcaemia. Bilateral mastectomy was performed, the histology was consistent with massive juvenile hypertrophy with some areas of necrosis. The breast tissue also exhibited high levels of expression of oestrogen and progesterone receptors.

1st March 2016

Transfer to Regional Children’s Hospital for endocrine and surgical assessment. Hypercalcaemia resolved with hyperhydration.

19th Feb

She developed significant hypercalcaemia which was managed with hydration. Ongoing concern regarding skin breakdown and tissue necrosis. Commenced Tamoxifen to block oestrogen receptors.

4th March 2016

She had an uncomplicated recovery and was discharged home with simple analgesia. Gonapeptyl and Tamoxifen were stopped.

12th Feb 2016

Admitted to local hospital with increasing breast enlargement. Skin changes with tissue breakdown and extreme discomfort requiring intravenous antibiotics and opiate analgesia.

Dec. 2015

Referred by GP, increasing breast size, discomfort, disturbed sleep and worsening behaviour.


Local hospital assessment with initial investigations (table 1). Review with visiting Endocrinologist; commenced Gonapeptyl injections.