“STONES, BONES, ABDOMINAL GROANS, THRONES, PSYCHIC MOANS”: A CASE REPORT OF PRIMARY HYPERPARATHYROIDISM.

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Introduction:

- Primary hyperparathyroidism is seen in 1% of adult population where mean calcium, parathyroid hormone and alkaline phosphate levels are elevated while vitamin D levels are low.
- Etiopathogenesis: Autonomous production of parathyroid hormone which results in hypercalcemia. Pathogenesis of parathyroid adenoma is unclear. Radiation to head and neck; sporadic and familial association has been considered.

Case Presentation:

Age/Sex: 68/Male

Chief complaints:

- Swelling on right side of the neck x 6 months.
- Back ache, muscle ache and insomnia for 1-2 years.

Past History:

Acute pancreatitis, AKI with CKD, Hypercalcemia 1 month ago. Presentation at that time: vomiting, abdominal pain, constipation.

- He was then referred to us.

On examination:

- A firm, non-tender mass palpable on right side of neck, moved on deglutition.
- Laryngoscopy: Both vocal cords were normal and mobile.

On further evaluation:

- USG neck indicated right Parathyroid adenoma.
- INVESTIGATIONS: Indicated Primary Hyperparathyroidism. As shown in the table.

<table>
<thead>
<tr>
<th>Parathyroid hormone level</th>
<th>857.6 pg/ml</th>
<th>(10-65 pg/ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Calcium</td>
<td>12.9 mg/dl</td>
<td>(8.5-10.5 mg/dl)</td>
</tr>
<tr>
<td>Urinary Calcium</td>
<td>452.5 mg/24hrs</td>
<td>(100-300 mg/24 hrs)</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>25.8ng/ml</td>
<td>(suboptimal: 21-30 ng/ml)</td>
</tr>
<tr>
<td>Lipase</td>
<td>6,756 U/L</td>
<td>(73-393 U/L)</td>
</tr>
<tr>
<td>Phosphorous</td>
<td>2.7 mg/dl – Normal</td>
<td>(2.5-4.5 mg/dl)</td>
</tr>
<tr>
<td>S. ALP</td>
<td>129 U/L</td>
<td>(&lt;116 U/L)</td>
</tr>
</tbody>
</table>

Diagnosis: Primary Hyperparathyroidism

Treatment:

- Right hemithyroidectomy + Right inferior parathyroidectomy.
- Right hemithyroidectomy was also done as:
  - There was no plane between the right lobe of thyroid and parathyroid adenoma.
  - Fear of seeding.

Intraoperative PTH was 57 pg/ml. Venous sample was taken after 10 minutes of excision of the tumor:

- Histopathogical examination: Suggestive of Parathyroid adenoma and normal thyroid.
- Post-operatively he had HUNGRY BONE SYNDROME. presented with tetany. S.Calcium level was 5.5 mg/dl. Medically managed with i.v calcium gluconate, oral calcium and vitamin D.

Conclusion:

- Differentiating between primary, secondary and tertiary hyperparathyroidism is important as management varies.
- Nuclear Parathyroid Scintigraphy and SPECT-CT have been fundamental tool to locate the pathology pre-operatively.
- Intra-operative PTH level was useful test to confirm the complete removal of complete hyperfunctioning parathyroid tissue. As t-half of parathormone is 1-4 mins.