CLINICAL PROFILE OF PARATHYROID ADENOMA IN CHILDREN AND ADOLESCENTS: A SINGLE CENTER EXPERIENCE

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INTRODUCTION

Parathyroid adenoma (PRAD) is less common than in adulthood, but its morbidity is higher in children.

The typical presentation is incidentally discovered as asymptomatic hypercalcemia.

AIM

We aimed to evaluate the clinical characteristics of PRAD and our clinical experience, since early disease is often asymptomatic.

METHOD

From 2010-2020, all children diagnosed with PRAD at our institution were reviewed.

Clinical, biochemical, radiological aspects and follow-up characteristics of patients were evaluated.

RESULTS

Admission Characteristics

- There were eight subjects (F/M=6/2).
- Mean age was 13.80±2.81 ranging from 10 to 17 years. Two were prepubertal.
- All symptoms and conditions were shown (figure 1).
- One had a family history of MEN-1 syndrome, and two were sisters with a family history of PRAD.
- Laboratory findings
  - PRAD could not be demonstrated by US in one patient.
  - Tc-99m-Seastamibi scintigraphy revealed the presence of PRAD in only six.
  - Arrhythmia, nephrolithos, bone resorption were not observed in any of the subjects.
- All underwent parathyroidectomy. One subject was on pamidronate, and one other subject was on alendronate before surgery.

![Figure 1. Age distribution of all cases respectively (year)](image)

![Figure 2. Presenting clinical symptoms and conditions in all cases](image)

Table 1. Biochemical characteristics of all cases

<table>
<thead>
<tr>
<th>Case number</th>
<th>Ca (mg/dl)</th>
<th>On Operation Day</th>
<th>1st Day After Surgery</th>
<th>1 Year After Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.58±1.28</td>
<td>11.44±0.94</td>
<td>8.78±0.46</td>
<td>9.72±0.27</td>
</tr>
<tr>
<td>P (mg/dl)</td>
<td>3.58±0.79</td>
<td>3.45±0.61</td>
<td>3.63±0.74</td>
<td>4.63±0.75</td>
</tr>
<tr>
<td></td>
<td>3.64 [2.4; 4.6]</td>
<td>3.22 [2.5; 4.49]</td>
<td>3.59 [3.2; 5.2]</td>
<td>4.38 [3.8; 5.94]</td>
</tr>
<tr>
<td>ALP (mg/dl)</td>
<td>222.38±116.24</td>
<td>203.25±108.03</td>
<td>195.5±106.07</td>
<td>163.3±110.41</td>
</tr>
<tr>
<td></td>
<td>188 [83; 390]</td>
<td>191 [76; 363]</td>
<td>185.5 [57; 360]</td>
<td>122 [53; 362]</td>
</tr>
<tr>
<td>PTH (pg/ml)</td>
<td>244.81±173.61</td>
<td>199.21±89.29</td>
<td>56.94±55.99</td>
<td>44.53±15.31</td>
</tr>
<tr>
<td></td>
<td>181.1 [74.9; 645.4]</td>
<td>211.05 [62; 332.3]</td>
<td>40.65 [7.7; 195.9]</td>
<td>37.55 [33; 76]</td>
</tr>
</tbody>
</table>

![Table 1](image)

Treatment and Follow-up Characteristics

- Serum Ca and PTH decreased at the first postoperative day (Table 1).
- After a year of surgery, physical examinations of all were normal.
- Tumor size of PRADs were measured as 13.80±2.81 ranging from 11 to 19 mm on pathological examination.
- In our follow-up, two subjects needed reoperation. None of them had Brown tumor.
- Molecular analysis of six subjects could be analyzed. Only with family history one of three subjects had MEN1 [c.1594 C>T (p.Arg532*)] positive. RET sequence analysis of two, and Casr,GNA11, AP2S1 sequence analysis of three were normal.
- All subjects were followed up during 13.80±2.81 [2.33±54] months.
- On follow up of all patients, no problems were observed.

CONCLUSIONS

PRAD should be considered in children older than 10 years of age with hypercalcemia. It should be kept in mind that most of the cases are asymptomatic at diagnosis.

Suspected cases should undergo both US and scintigraphy to detect PRAD. Patients should be carefully followed up for risk of familial HPT.

REFERENCES