GIANT PARATHYROID ADENOMA WITH SEVERE HYPERCALCEMIA CASE REPORT

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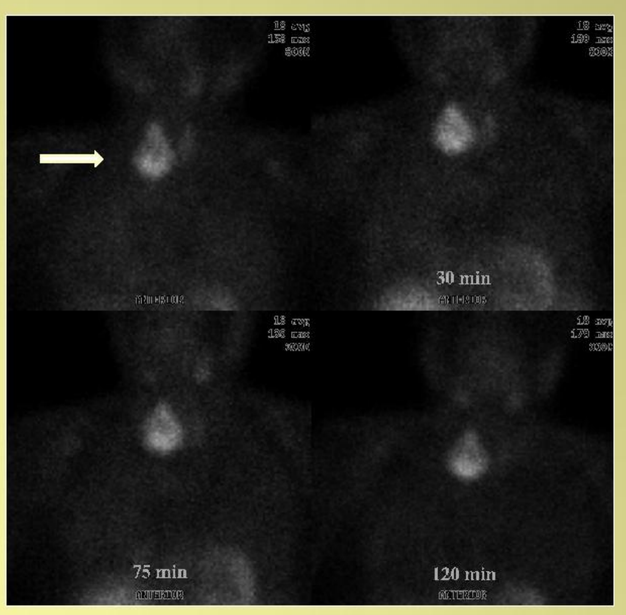
Introduction:
Parathyroid adenomas are the main cause of primary hyperparathyroidism. They are usually small - less than 1 g - and not easy to find - requiring meticulous imaging studies for localization. Giant adenomas (defined according to gland size at or above 3.5g – the 95th percentile of gland weight) have seldom been described in the literature.

Case Report:
- A 68 year old woman presented in our clinic with polydipsia, polyuria, nausea, weight loss, dorsal and lumbar spine pain, extreme muscular weakness - she wasn't able to walk – confusion and depressive mood. Symptoms developed progressively during the last 6 months in a patient with unremarkable medical history.
- Clinical exam: signs of dehydration and a palpable right cervical mass.
- Blood chemistry results: serum calcium 21mg/dL(normal range 8.8-10.2), serum alkaline phosphatase 680IU/L(normal range 50-136), serum phosphate 2.0mg/dL(normal range 2.5-4.5), normal kidney function. Serum intact PTH was 2238pg/mL (normal range 15-65). The patient was also vitamin D deficient - 25OH vitamin D 14µg/L. Thyroid function tests were normal.
- Radiographic study showed signs of vertebral osteoporosis and fracture of the first lumbar vertebra. Cerebral CT scan (indicated by the psychiatrist) showed multiple osteolytic areas of the skull.
- DXA osteodensitometry: osteoporosis (lumbar spine T score -2.9SD, radius 33% T score -6.7SD).
- Abdominal ultrasound: bilateral nephrolityhiasis.

Cervical utrasonography



Parathyroid scintigraphy

- Cervical utrasonography: hypoechoic, inhomogeneous mass with regular margins, 38/30/45mm, laterally and caudally to the right thyroid lobe; no image of adenopaty.
- Parathyroid scintigraphy (99Tc-MIBI): large area of high uptake in the right cervical region.
- Treatment : intravenous fluids for re-hydration, loop diuretic (furosemide), intravenous bisphosphonate (Zoledronate 4mg) and subcutaneous Calcitonin (400U every 12 h) to reduce the level of calcium, which decreased to11.2mg/dl after 5 days but did not normalize.
- The patient was successfully operated. Surgical exploration found no evidence of malignancy: the tumor, although large (32g), was encapsulated, with no signs of local invasion and was easily removed.
- The pathologic diagnosis: parathyroid adenoma with nuclear atypia, without capsular or vascular invasion.

Serum calcium dropped after surgery – lowest level 6.8mg/dl fourth day. Hypocalcemia was managed with iv calcium and Alpha-calcidol (2µg). At discharge the patient was hypocalcemic but asymptomatic.

Calcium metabolism parameters – evolution after parathyroid surgery

	Calcium mg/dl (n 8.8-10.2)	Alkaline phosphatase IU/l (n 50-136)	PTH pg/ml (n 15-65)	25-OH Vitamin D µg/l (n >30)
At discharge	8.3	678	182	14.0*
1 month	7.4	233	506	17.2
3 months	8.5	156	390	20.5
6 months	8.8	135	62	38.0

*preoperative value

Despite treatment with Cholecalciferol 10000IU, Calcium 2g and Alpha-calcidol 2µg (with close monitoring of calcium metabolism parameters), mild hypocalcaemia persisted for months thereafter and so did the high levels of PTH - the hungry bones syndrome. Parathyroid hormone normalized after 6 months, when calcium and vitamin D levels returned to

Conclusions:
This is a rare case of giant parathyroid adenoma. The particularities of the case are the size of the tumor, the very high level of calcium and PTH , and the persistence of high levels of PTH and hypocalcemia months after surgery in a patient who is also vitamin D deficient.

17 ECE
296--EP
Calcium, vitamin D and bone
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DOI: 10.3252/pso.eu.17ece.2015
Poster presented at: ECE2015 16–20 May 2015 DUBLIN, IRELAND 17th EUROPEAN CONGRESS OF ENDOCRINOLOGY
PosterSessionOnline.com