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HYPERPARATHYROIDISM - JAW TUMOUR: A CASE REPORT

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ABSTRACT

The hyperparathyroidism-jaw tumor (HPT-JT) syndrome is an autosomal dominant disorder characterized by the occurrence of parathyroid tumors and ossifying jaw fibromas. Hyperparathyroidism is due to increased activity of the parathyroid glands, either from an intrinsic abnormal change altering excretion of parathyroid hormone (primary or tertiary hyperparathyroidism) or from an extrinsic abnormal change affecting calcium homoeostasis stimulating production of parathyroid hormone (secondary hyperparathyroidism). Primary hyperparathyroidism is the third most common endocrine disorder, with the highest incidence in postmenopausal women. Here we present an intresting case of hyperparathyroidism – jaw tumour where the patient had reduced serum calcium and serum alkaline phosphate level.

KEY WORDS : **Hyperparathyroidism – jaw tumour, Parathyroidectomy**

INTRODUCTION

Hyperparathyroidism – Jaw tumour (HPT-JT) is a rare disease that includes primary hyperparathyroidism, fibro-osseous lesions of maxilla, renal tumours and cysts and uterine tumours[1,2]. It was first reported by Jackson[3] in 1959. Since then many cases have been identified.[2,4-13] We present an intresting case of HPT – JT in which a 27 year old female patient initially presented with swelling in her left lower back region of jaws since 6 months, which is diagnosed via biopsy as a Central Giant Cell Granuloma. Laboratory analysis showed elevated parathyroid hormone (PTH) level and serum alkaline phosphatase level, but reduced serum calcium and normal serum phosphorous level. Scintigraphy showed positive for right inferior parathyroid. There was no vitamin D deficiency noted. The patient underwent parathyroidectomy which resulted in normal PTH levels. Three months after parathyroidectomy, the lesion in the jaw did not reduce in size and became symptomatic. Surgical excision of the lesion is done and pathological analysis revealed Central Giant Cell Granuloma.

Case report

A 27 year old female has presented to our Department of Oral and Maxillofacial Surgery with a compliant of swelling in her left lower back region of the jaws since 6 months. The patient had no significant medical problems and no remarkable family history. General examination of the patient revealed a swelling in the middle metatarsal of left leg. Extraoral examination revealed multiple swellings in the lower jaw, a large swelling in the left lower back region extending superiorly till Zygomatic Bone, inferiorly till inferior border of mandible, anteriorly corner of the mouth, posteriorly till the posterior border of the ramus, and angle a small swelling in the symphysis region of the mandible.(**Fig.1**)

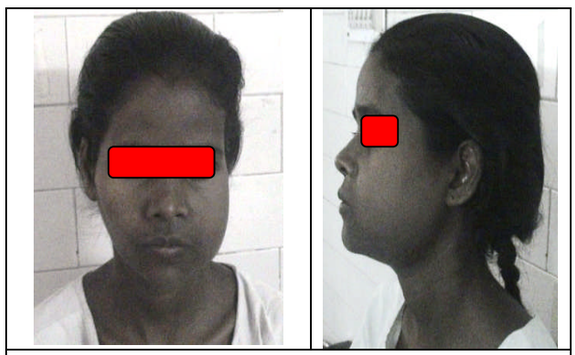

Fig .1.Preoperative photographs

These growths were hard on palpation, non tender with no local rise of temperature. Intraoral examination showed palpable hard expansile mass in left lower back region distal to 37 tooth (**Fig.2**). An orthopantomogram showed multiple radiolucent lesions, one lesion in the left angle region of the

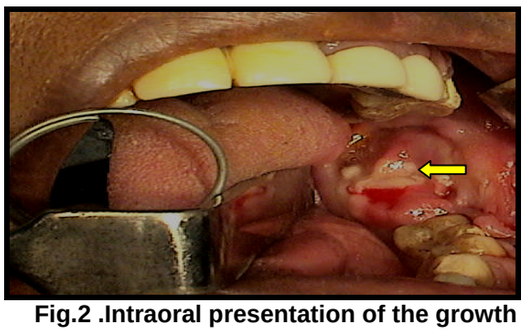

Fig.2 .Intraoral presentation of the growth

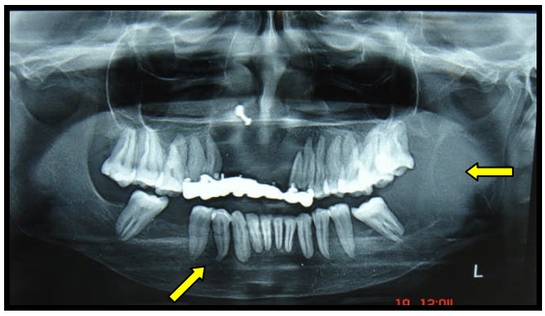

Fig.3. Orthopantomograph

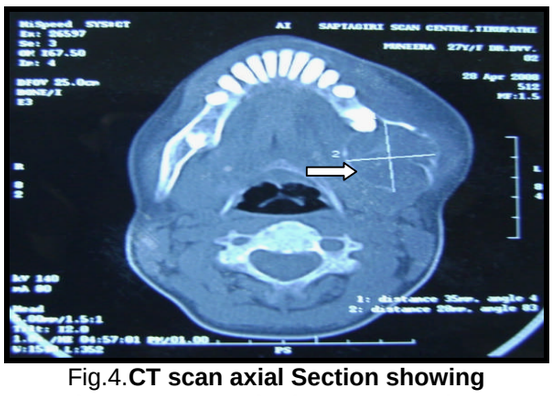

Fig.4.**CT scan axial Section showing the tumor mass in the ramus region**

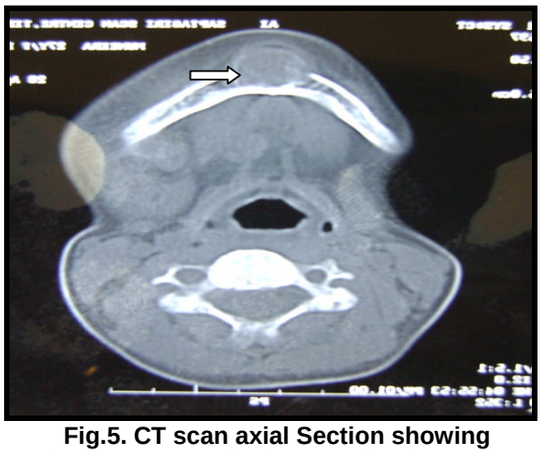

Fig.5. CT scan axial Section showing the tumor mass in the symphysis region

mandible extending between the left sub – condylar region and 37 tooth, the tooth is pathologically migrated. Another radiolucent lesion was noted in the anterior region of the mandible extending from 43 to 33. (**Fig.3**). Computed Tomography Scan of facial bones showed expansion and perforation of buccal and lingual cortical plates in the left angle region, and perforation of labial cortical plate in the lesion in the anterior mandible. (**Fig.4 and Fig.5**)

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Initial laboratory analysis showed reduced serum calcium level 8.1 mg/dl (9 – 11 mg/dl), normal serum phosphorous level 3.1 (2.5 – 5 mg/dl), increased parathyroid hormone level 1312.7 pg/dl (11.1 – 79.5 pg/dl) and serum alkaline phosphatase 498 (up to 268 units/l). Referral was made to an endocrinologist for evaluation of suspected hyperparathyroidism. Scintigraphy Scan was performed which showed positive for right inferior parathyroid adenoma.(**Fig.6**)

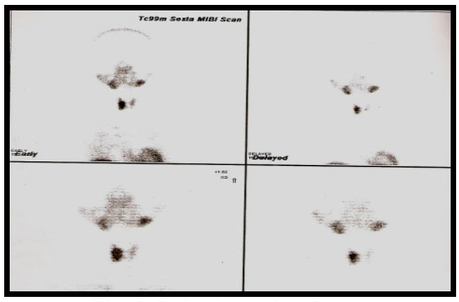

Fig.6.Scintigraphy Scan

There was no vitamin D deficiency noted. Patient underwent right inferior parathyroidectomy by the endocrine surgeon. The mass was histologically consistent with the parathyroid adenoma. Three months after the parathyroidectomy the swelling did not subside. An Incisional biopsy is performed in relation to left lower back region of the jaw intraorally distal to 37. The Histopathological examination revealed central giant cell granuloma. (**Fig.7**)

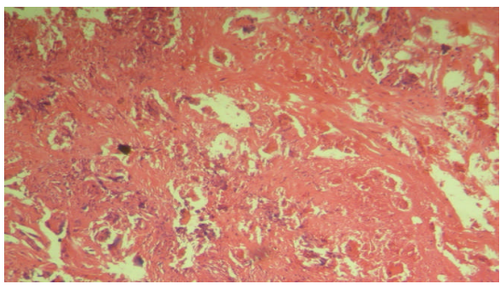

Fig.7. Photomicrograph showing of the incisional biopsy specimen

Now the patient is planned for surgical resection of the mandible in left side with reconstruction plate under general anaesthetia.(**Fig.8 and Fig.9**)

Surgical resection followed by reconstruction of the mandible is done on the left side and curettage is performed on the lesion in the anterior mandible.
Patient was recalled for follow – up for every month for 3 months followed by once in 6 months. The resected specimen is sent for histopathological analysis which were consistent with central giant cell granuloma.

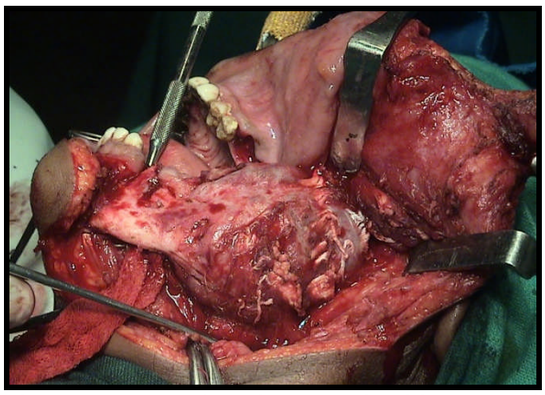

Fig.8. Intraoperative photograph with exposed right mandible with tumor mass

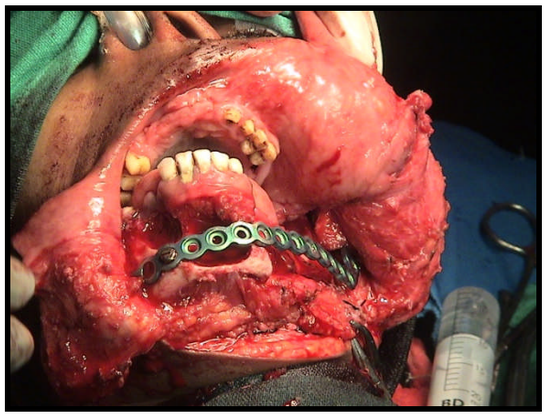

Fig.9. Reconstruction plate in place after partial mandibulectomy and curettage of anterior tumor

Discussion

The major features of HPT-JT are seen largely in three groups: the parathyroid glands, the osseous tissue of maxilla and mandible and the kidneys.[4] uterine tumours have also been reported.[2]the hyperparathyroidism found in HPT-JT is usually caused by parathyroid adenomas. The adenomas are usually solitary and many are cystic in nature .[9,13] in addition there is a higher incidence of parathyroid carcinoma. [12] In this case, patient presented Jaw tumors in the lower jaw and a metatarsal with an elevated parathyroid hormone (PTH) level and serum alkaline phosphatase level, but reduced serum calcium and normal serum phosphorous level. Scintigraphy revealed hot spots for right inferior parathyroid gland. Right inferior parathyroidectomy was done by endocrine surgeon.

Review of the patient after three months showed regression of the tumor in the metatarsal but the jaw tumors did not show any regression even though the parathyroid hormone levels were with in the normal range. Patient was planned for surgical resection followed by reconstruction.

Fig 10. **Post operative photographs of the patient**

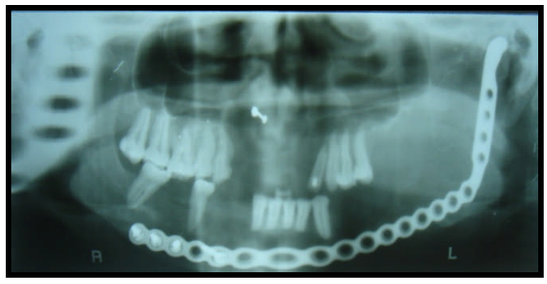

Fig.11. Post operative Orthopantomograph

This case shows the importance of interdisciplinary treatment planning and cooperation in treating a case of HPT – JT. Additional laboratory investigations such as parathyroid hormone and vitamin D should be pursued when ever clinical suspicion exists. Due to the asynchronous presentation of Hyperparathyroidism and Central Giant Cell Granuloma, it is important that dentists and physicians should be aware of their unique existence.

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