Huge Osteoclastoma of Hyoid Bone: A Case Report

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Abstract Giant cell tumors (GCT) of hyoid bone are very rare, and only few individual cases were reported in literature. We present such a case of GCT arising from left cornu of hyoid bone. The patient underwent trans-cervical complete excision of the tumour. Postoperatively, patient did well without recurrence or metastasis for 2 years follow up.

Keywords Osteoclastoma of hyoid bone · Giant cell tumor · Hyoid bone

Introduction

Giant cell tumors of the bone comprises of only five per cent of all bone tumors [1]. Very rarely, these tumors are found in the head and neck region and are difficult to diagnose pre-operatively. Till date, only two cases arising from the hyoid bone has been reported. We discuss the management of this rare tumor and present a concise review of literature.

Case Report

An otherwise healthy 28 years old man presented to our outpatient department, with a huge mass in the anterior and left side of neck of 2 years duration. There is history of mild dysphagia, mild dyspnea and change in voice of recent onset. His general physical examination was unremarkable. He had a hard, non-tender neck mass extending from the level of mandible to the level of cricoid cartilage measuring around 12 cm × 8 cm [Fig. 1]. The mass was fixed. The skin overlying the swelling was normal. The local temperature was not raised. On oral examination, there was a huge mucosa covered mass seen arising from the left side base of tongue. Indirect laryngoscopy showed a smooth submucosal mass in the region of left vallecula pushing the larynx to the opposite side. On palpation, the mass seems to be in continuity with neck swelling. The rest of otorhinological examination appeared normal.

CT scan revealed a large multiloculated heterogeneously enhancing expansile lesion attached to the hyoid bone, predominantly on left side. The lesion was extending from the left submandibular region to the left cricoid cartilage. Superiorly the lesion was seen abutting the base of tongue and floor of the mouth. Medially the lesion was causing narrowing of laryngeal and oropharyngeal airway, Left parapharyngeal and submandibular space. The mass seems to be arising from the hyoid bone sparing the right greater cornu, causing extrinsic compression of the hypopharynx (Fig. 2).

Fine needle aspiration cytology of mass showed small number of multinucleate giant cells with uniform dispersed nucleoli and light staining cytoplasm seen. The picture was suggestive of benign giant cell tumor.

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Fig. 1 Pre operative photograph of the patient

Fig. 2 CT scan of shows large expansile, multi septate heterogeneously enhancing osteolytic lesion seen in *left side* neck involving body and cornu of hyoid bone

The patient was investigated and operative intervention planned. The patient underwent resection through cervical incision. The whole tumor along with left hyoid bone was excised sparing the right greater cornu of hyoid bone.

On gross appearance the tumor received as multiple fragments, small to large size tissue pieces of firm to hard in consistency, attached to hyoid bone. On cut section, the specimen showed variegated appearance with solid (dirty white) and hemorrhagic (dark brown) areas (Fig. 3).

Microscopic examination showed mesenchymal tumor composed of mononuclear cells and multinucleated osteoclast type giant cells both arranged in compact fashion. The mononuclear cells have round to oval nuclei with uniformly distributed chromatin, and indistinct nucleoli with eosinophilic cytoplasm. The multinucleated osteoclast type

Fig. 3 Gross photograph of outer surface of tumour and showing variegated appearance with *solid white* and *brown* haemorrhagic areas

Fig. 4 Microphotographs showing mononuclear cells and multinucleated osteoclast type giant cells both arranged in compact fashion. (H and E 10X)

giant cells are uniformly distributed and contain a variable number of nuclei, usually 40–60 nuclei. The mononuclear cells may be spindle and arranged in storiform pattern. Mitotic figures are about 6/10 (Fig. 4). The histopathological diagnosis was osteoclastoma of hyoid bone.

The post-operative period was uneventful and the patient recovered completely. The patient is free of any local or distant recurrence during 2 years of follow up.

Discussion

Approximately 2 % of all GCTs arise in head and Neck region, with majority of them occurring in sphenoid, ethmoid and temporal bones [2, 3]. They are rarely found in the neck and only 18 cases have been reported in laryngeal

framework [4]. To our knowledge only two cases has been described in hyoid bone [4, 5].

These cases present with anterior neck mass, hoarseness of voice and difficulty in swallowing. They are generally difficult to differentiate from benign laryngeal swellings and other laryngeal malignancies.

Giant cell tumour of Head and Neck region are rare and unless accurate FNA and radiological studies are performed, diagnosis is most often made postoperatively [5].

The giant cell tumors can be diagnosed on FNAC by the presence of dual population of mononucleated tumor cells and multinucleated tumor cells (osteoclasts) with cohesive cell groupings of the two types of cells was adequate to make diagnosis of two giant cell tumor [6].

On gross examination the tumor expands the bone and is osteolytic in nature with bone destruction and thinning of the cortex. The tumor may contain focal areas of necrosis, hemorrhage and cyst formation [6]. Microscopy shows fibroblast, histiocytes and multinucleate osteoclast like giant cells. The giant cells are found dispersed throughout the tumor. The giant cell contains variable number of nucleoli, but there are no mitosis and nuclear atypia in these cells [7]. However, there is a poor correlation between histological findings and tendency to recurrence and malignant transformation [8].

Lesions invariably demonstrate bone lysis, most commonly associated with narrow zone of transition and lacking surrounding sclerosis with associated soft tissue mass. GCTs often demonstrate prominent trabeculation (33–57 % of cases) with a resultant multi loculated appearance (soap bubble appearance) [9].

The differential diagnosis includes a host of entities including giant cell reparative granuloma, brown tumor of hyperparathyroidism, osteoblastoma, chondroblastoma, aneurysmal bone cyst, non-ossifying fibroma, foreign body reaction, benign fibrous histiocytoma, osteosarcoma with abundant giant cells [10].

Giant cell tumors are usually benign but can be locally aggressive and can rarely metastasize. The treatment of GCTs in Head and Neck is controversial, in literature majority of patients were managed surgically, though it has propensity to reoccur and metastasise to lungs. Some authors also advocated post operative radiotherapy. The

indications for radiotherapy include inoperable and incomplete resected lesions, and lesions that reoccur locally despite definitive operations [8].

This case is unusual with respect to its site of origin and its huge size. In spite of this, there is no reoccurrence on CT scan in 2 years of follow up.

Compliance with Ethical Standards

Conflicts of interests None.

Informed consent Informed consent was obtained from patient for this study.

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