Chondrosarcoma of hyoid bone: a case report

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Abstract

Chondrosarcoma of hyoid bone is a rare malignant tumour, with only a few cases reported in literature. We present the case of a 28-year-old male with grade I hyoid bone chondrosarcoma.

Keywords: Chondrosarcoma, Hyoid bone, CT scan.

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Introduction

Chondrosarcoma is a rare malignant tumour, characterised by cartilage matrix production. It commonly occurs in long bones, pelvis, and ribs. Only 10% of chondrosarcoma occur in the head and neck region, where they commonly involve the skull base, maxilla, and the larynx.[1,2] In larynx, the most common site is cricoid cartilage (70%) and thyroid cartilage (20%).[3] Hyoid bone is an extremely rare location and the patient presents with isolated painless, slow growing neck mass.[4]

We report the 24th case of hyoid chondrosarcoma and discuss the treatment outcome.

Case Report

A 28-year-old male presented in the outpatient department of otorhinolaryngology, Liaquat National Hospital, Karachi, in August 2020. He presented with a gradually enlarging, painless mass on the left side of the neck for one year. The patient's voice and swallowing were normal. He denied any nasal blockage, epistaxis, fever, night sweat and weight loss. On examination, about 5cm firm, non-tender, rounded mass with no overlying skin changes at level II on the left side of the neck was present. The mass was not moving on deglutition. Other ENT examinations, including endoscopy in the clinic, showed left pharyngeal wall bulge with narrowing of the oropharynx obscuring the left vocal cord.

Fine needle aspiration of the mass revealed multiple fragments of tissue composed of uniloculated chondrocytes with single nuclei and mild increase in cellularity with no significant mitosis. CT scan of the neck with contrast revealed, heterogeneous enhancing lobulated lesion of about 4 x 3.9 x 3cm (AP X TS X LS), attached with the left hemi-hyoid with bony erosion. The lesion was abutting the submandibular gland laterally and causing mild pressure on the oropharynx. The lesion was also abutting the prevertebral fascia and neck vessels but fat planes were intact. (Fig-1 a, b)

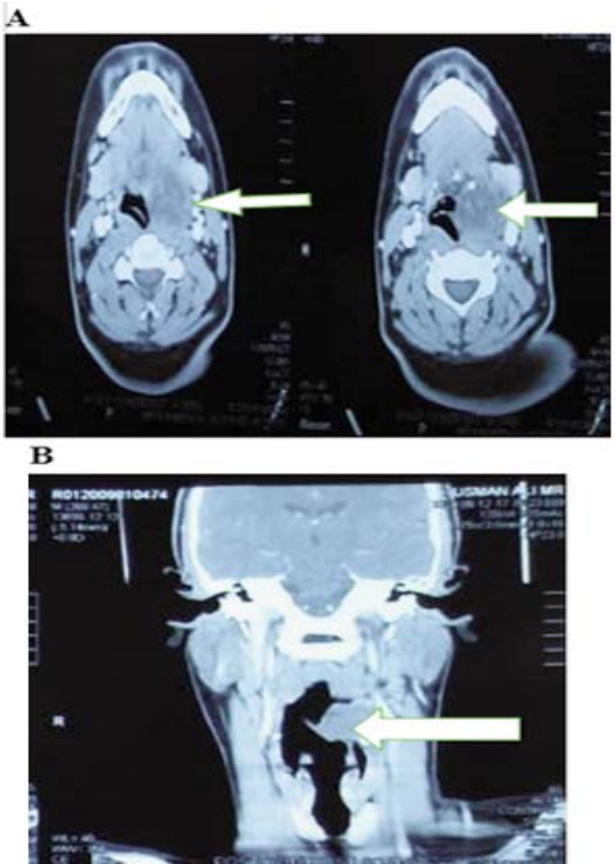

Figure-1: (a) CT Scan of the neck (axial view) reveals well-defined lesion attached with the left half of the hyoid bone causing narrowing of oropharynx. (b) CT Scan coronal view reveals lesion arising from the left half of the hyoid bone.

The patient underwent excision of the neck mass along with left hemi thyroidectomy.

Intraoperatively, the mass was superficially well capsulated but the deeper part of the mass was

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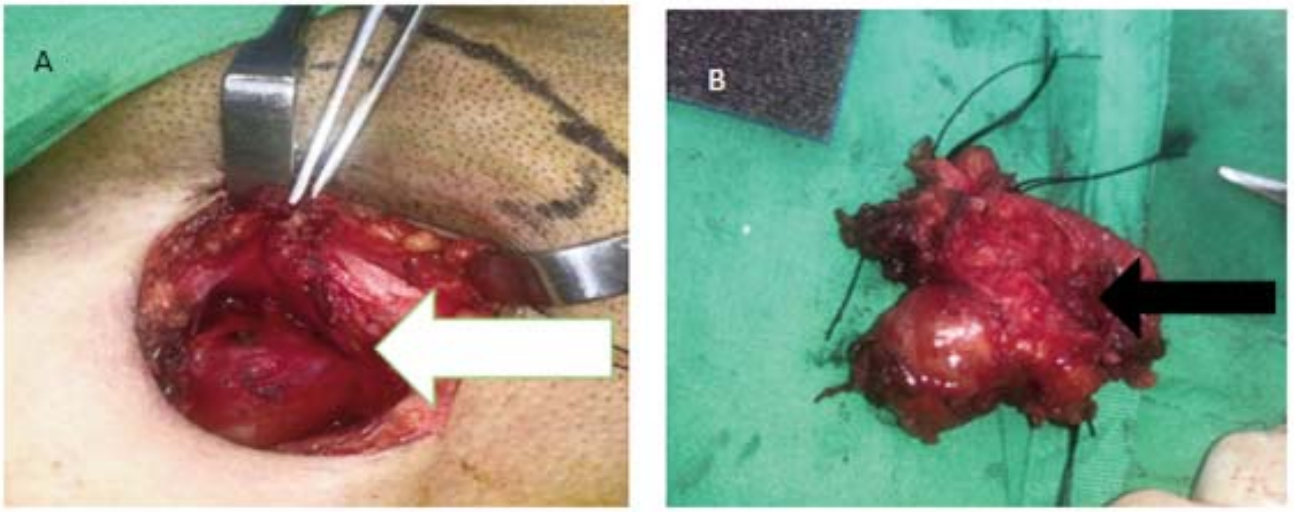

Figure-2: (a) Intraoperative specimen showed superficial well capsulated mass. (b) specimen revealed deeper portion (black arrow) attached with the left half of the hyoid bone possibly causing erosion of the bone.

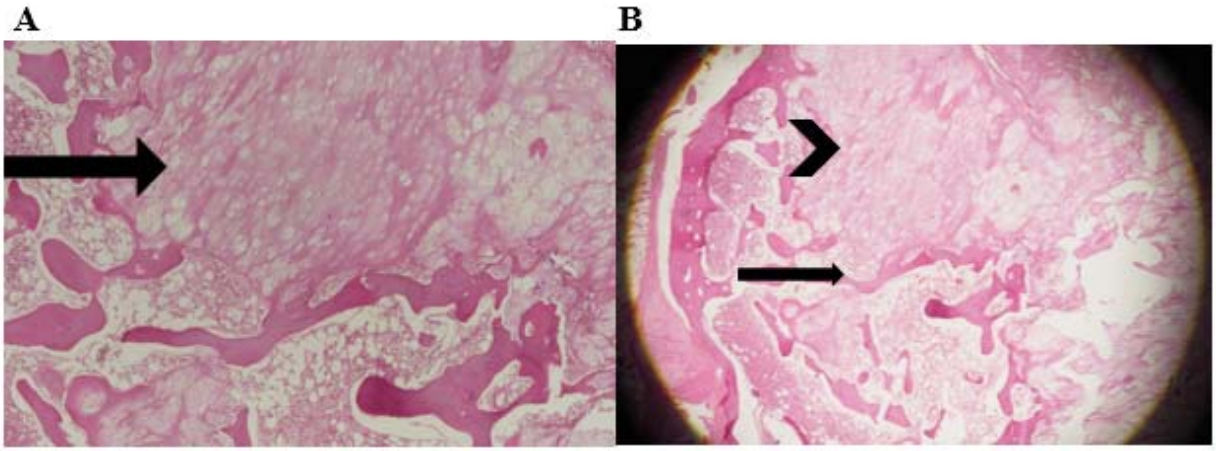

Figure-3: (a) Abundant cartilaginous matrix composed of atypical chondrocytes infiltrating into the bone. (20X magnification), (b) Atypical chondrocytes with increased cellularity (arrow-head). Bone infiltration (arrow) (2x magnification)

infiltrating underlying the greater horn of hyoid bone. (Fig-2).

The mass was excised with a cuff of mylohyoid muscle and sent for Frozen section; clear margins were achieved.

Final histopathology showed chondroid lesion arranged in a lobular architecture composed of atypical chondrocytes with enlarged hyperchromatic irregular nuclei, increased cellularity with occasional mitosis. (Fig-3)

Immunostaining was positive for antibody S100. These findings were compatible with grade I chondrosarcoma.

Post-operatively, the patient did well and was discharged on the second day. The case was discussed in the tumour board meeting and close observation was decided.

The patient was advised close follow-up. PET-Scan was done on follow-up which was negative. No evidence of recurrence was noted at two-year follow-up.

Discussion

In head and neck region, the most common site of chondrosarcoma is maxilla. Hyoid bone chondrosarcoma may be missed because of its slow growing nature and rare occurrence.[4] It has been reported in the body, and greater or lesser horn of hyoid bone.[5]

Men are affected more frequently than women. Among the few reported cases, the age of the patients varies between 40 and 80 years.[6] Our patient is the youngest reported case till date.

Ultrasonography can help to determine the texture of the mass but it is difficult to correctly diagnose chondrosarcoma of hyoid bone on ultrasonography.[5]

CT scan is the favoured imaging technique because it can better identify tumour origin and extension. In our case, CT scan revealed the mass causing erosion of the hyoid bone. MR imaging can define extension of the tumour and its relation with surrounding soft tissues. On T1-weighted image, chondrosarcoma appears as an area of low signal intensity and on T2-image it appears as high signal intensity.[6]

Surgical excision of the tumour is the treatment of choice for chondrosarcoma with adjuvant radiotherapy, in case of recurrences or positive margins.

Radiotherapy is usually done where the patient refuses surgery or the disease involves the base of the skull.[7] Chemotherapeutic agent does not have a very effective role in chondrosarcoma, and hence it is rarely used; only either as initial or in postoperative cases. Few drugs like Cyclophosphamide or Sirolimus can be used in case of metastatic disease.[8]

Histologically, chondrosarcoma is classified in three grades—from 1 to 3— depending on mitosis rate, cellularity, and size of nucleus. Five-year survival rate in grade I, grade II, and grade III chondrosarcoma is 90%, 81%, and 43%, respectively.[9]

The most important prognostic factor is the location of primary tumour and surgical excision. The local recurrence rate of chondrosarcoma is high in head and neck region as compared to chondrosarcoma in other body parts. Recurrence of hyoid bone chondrosarcoma is reported in five out of six cases in literature.[10]

Conclusion

Chondrosarcoma of hyoid bone is rare site, only few cases reported in literature. Main treatment is complete surgical excision followed by radiation depending upon grade of disease and surgical resection margins.

Consent: Written consent was obtained from the patient to publish his case anomalously.

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Conflict of Interest: None.

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