

Granular Cell Ameloblastoma : A Rare Variant

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Abstract

Ameloblastoma is an epithelial odontogenic tumor of the jaw and exhibits diverse histo-pathologic subtypes like follicular, plexi-form, acanthomatus and desmoplastic variants which occurs either singly or in combination.¹ Granular cell change in ameloblastoma is rare histopathological entity and was first seen by Krompecher.³ Because of aggressive nature of this tumor it should be closely monitored for recurrence and metastasis.

Introduction

GCA is a rare histological variant of ameloblastoma accounting for less than 5% of the total ameloblastomas. Granular cell ameloblastoma is seen in combination usually with follicular or plexiform subtypes.¹ these two subtypes are common variants accounting 32.5% & 28.2% respectively followed by acanthomatous with 12.1% while extremely uncommon is desmoplastic ameloblastoma incidence ranges from 4-13% and less common subtypes includes granular cell ameloblastoma and basal cell ameloblastoma.²

Case Report

A 50 yrs old female visited govt .dental college & hospital Nagpur couple of years back with a complaint of pain & swelling on left side of the face since 1.5yrs. Patient underwent extraction of mandibular left molar. 4-5mths after extraction of that tooth patient noticed a swelling in the same region which increased gradually to the present size.

Patient was suffering from hypertension since 3 yrs but was under medication.

Extra Oral Examination

Facial asymmetry was noted .Huge diffuse swelling of approx. 12x7cm was extending from right parasymphysis region to the angle of mandible on left side. The swelling was firm on palpation. The skin above the swelling was normal.

Intra Oral Examination

Large diffuse swelling of approx. 13x6x2cm present in left mandibular vestibule extending from 44, 45 to the retromolar region on left side. The swelling was soft to firm in consistency and was obliterating the buccal vestibule. The overlying mucosa was normal. No sinus was noted.

Provisional Diagnosis

- Ameloblastoma
- PIOC (Primary Intraosseous Carcinoma)

Investigations

1. **Orthopantomogram:** Huge multilocular radiolucency extending from 44 region till the ramus of mandible on left side. The huge radiolucency was causing destruction of lower border of mandible leaving a thin rim.
2. **FNAC (Fine Needle Aspiration Cytology):** FNAC done in GMC (Govt. Medical College), Nagpur showed good cellularity and three types of cells- (a) cohesive groups of basaloid cells (b) spindle cells (c) cells with abundant cytoplasm and eccentric nuclei. FNAC was suggestive of Ameloblastoma, subtype granular cell. To confirm the above diagnosis, incisional biopsy was done.

Histopathology

H&E stained section shows many ameloblastic follicles. The central cells of these follicles are large and have oval to polyhedral outline. The nucleus of these cells are pushed towards periphery or eccentrically. These large granular cells have prominent, coarse and eosinophilic granules. These granules are closely packed and distend the cytoplasm. These granular cells completely or partially replace the stellate reticulum like cells. At places it also replaces the peripheral columnar cells.

On the basis of histopathology report, hemimandibulectomy of the patient was performed.

Discussion

Ameloblastoma is locally invasive benign epithelial odontogenic tumor. It chiefly occurs in 4th and 5th decades with average age range of 39yrs. It commonly occurs in mandibular posterior region. Ameloblastoma has different variants like follicular, plexiform, acanthomatous, granular cell, basaloid, desmoplastic, clear cell, keratoameloblastoma and papilliferous ameloblastoma, mucous cell differentiation, hemangioameloblastoma. The term granular cell ameloblastoma is applied when the tumor most often follicular type shows an extensive granular transformation of the central stellate reticulum like cells. In some lesions all cells of the tumor islands or nests are composed of

granular cells.⁵ these cells were first seen by Krompecher in 1918 and was called pseudo-xanthomatous cells.³ GC transformation was thought to be aging process or degenerative change in longstanding lesions, this variant has been seen in young patients and clinically aggressive tumors.⁶

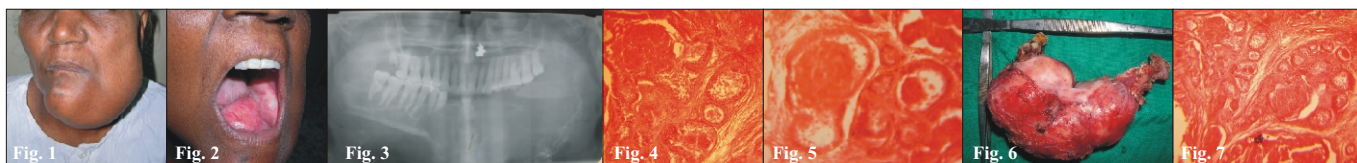
Hartman has reported a series of 20 cases of GCA and emphasized that this granular cell type appears to be an aggressive lesion with marked proclivity for recurrence unless appropriate surgical measures are instituted at first operation. In addition several cases of this type has been reported as metastasizing.⁹ Navarrett and smith investigated the ultrastructure of this variant & found that these granules consisted mainly of pleomorphic, osminofilic, lysosome like organelles.⁷ Originally they were considered to represent an aging or degenerative process but recent immuno-histochemical studies suggest that this phenomenon is related with increased apoptotic cell death of the lesional cells and the phagocytosis by neighbouring neoplastic cells.¹ On Immunohistochemical analysis it is seen that the granular cells show positivity for cytokeratin, CD68, lysozyme and alpha-1-antichymotrypsin, but are negative for vimentin, desmin, S-100 protein, neuron-specific enolase and CD15, indicating epithelial origin and lysosomal aggregation.⁸ Granular cells can appear in various odontogenic and nonodontogenic tumors. The differential diagnosis of granular cell ameloblastomas includes other oral lesions with a similar morphology of granular cell accumulation, including granular cell odontogenic tumour, granular cell tumour and congenital epulis. These lesions have different biologic behaviour and should be discriminated from granular cell ameloblastomas.¹

Conclusion

Granular cell ameloblastoma is an extremely rare and aggressive entity. In this case, hemimandibulectomy was performed and uptill now there is no recurrence noted. Due to paucity of cases documented, reported and surgically treated cases must be followed closely for metastasis.

References

References are available on request at editor@healtalkht.com



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Figure :Glide paths occur in multiple widths, lengths, and curvatures. It can be long orshort, wide or narrow, curved or more curved.