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EDITÖRE MEKTUP / LETTER TO THE EDITOR

Granular cell variant of ameloblastoma

Ameloblastomanın granüler hücre varyantı

Manas Bajpai[1], Nilesh Pardhe[1], Manish Kumar[2]

[1]NIMS Dental College, Department of Oral and Maxillofacial Pathology, Jaipur, India.
[2]SP Medical College, Department of Dentistry, Bikaner, India

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Dear Editor,

Ameloblastoma is a benign odontogenic tumor of epithelial origin shows various histological patterns. Granular cell ameloblastoma (GCA) is a rare variant accounts for 3.5% of all ameloblastomas, characterized by groups of granular cells, which have abundant cytoplasm filled with eosinophilic granules resemble lysosome, ultrastructurally and histochemically. GCA thought to behave more aggressively with a greater tendency to metastasize. However no correlation has been found between histological subtype and clinical behavior. We present a case of granular cell ameloblastoma in a 43 year old male.

Ameloblastomas are benign tumors whose importance lies in its potential to grow into enormous size with resulting bone deformity[1]. They are classified as solid multicystic, unicystic, desmoplastic and peripheral. Granular cell ameloblastoma (GCA) is a histological subtype of solid multicystic ameloblastoma characterized by the presence of granular cells occurs within the central area and replaces stellate reticulum like cells[2,3]. Granular cell changes have been thought to represent aging or degenerative change[4]. Some authors have suggested that lysosomes might play a role of autophagy and of remodeling the cytoplasm[5]. Numerous theories have been proposed on the origin and nature of these granular cells in ameloblastoma[2].

We present a case of solid multicystic maeloblastoma of mandible in a 43 year old male which was histologically diagnosed as GCA. An otherwise normal 43 year old male presented to the department of Oral medicine and Radiology with the chief complain of painful swelling on his left side of lower jaw since 8 months. Family history and past medical history were non – relevant to the presented symptom. Extra oral examination revealed a localized, large swelling on the left side of the face without any perforation or discharge. On intra – oral examination a well defined swelling extending from #33 to #36 was noted. On palpation the swelling was found to be firm to hard. The color of overlying mucosa was normal without any sign of ulceration. Panoramic radiograph revealed a well defined multi – locular radiolucent lesion extending from the tooth #37 to #45. Tooth #46 was missing. (Figure 1) Provisional diagnosis of ameloblastoma was given.

Incisional biopsy was done to reach the final diagnosis. Histopathological examination revealed ameloblastomatous follicles within connective tissue stroma with peripherally located tall columnar cell and centrally located stellate reticulum like cells. Some follicles showed cystic degeneration and granular changes in their cellular portion, few follicles revealed squamous metaplasia and cystic degeneration, connective tissue stroma was desmoplastic. (Figure 2a and 2b) Based on all the features a final diagnosis of granular cell ameloblastoma rendered. Patient referred to Oral oncosurgery unit Bhagwan Mahavir Cancer Research Centre Jaipur (BMCRC). Hemimandibulectomy with reconstruction was done and 1 year follow up of the patient was uneventful. GCA is a rare histological subtype of

Yazışma Adresi/Address for Correspondence: Dr. Manas Bajpai, NIMS Dental College, Department Of Oral And Maxillofacial Pathology, Jaipur India E-mail: dr.manasbajpai@gmail.com
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ameloblastoma, characterized by granular transformation of cytoplasm usually occurring in stellate reticulum like cells. Granular cells tend to be large and have an oval to polyhedral outline.[2]

GCA once considered as the most aggressive variant of ameloblastoma but recent studies have shown that earlier belief was a myth.[6] The granular cells are epithelial in origin and several ultrastructural studies describe them as lysosome. Few authors suggested that with age, the aged component progressively increased in the cytoplasm of tumor cells; however their ability to dispose the material decreases, hence their cytoplasm packed with lysosomal granules. [7] Other authors suggested that these lysosomes might have been a result of genetic alteration[8]. Recent immunohistochemical studies reveal the proliferation index of granular cells of GCA is the least among all variants of ameloblastoma.[5] The positive expression of proteins like cytokeratin, CD 68, lysozyme and alpha - 1 antichymotripsin to the granular cells of GCA showed that the granular cells are epithelial in origin[4]. Complete surgical excision with a careful follow up is mandatory owing to the recurrence rate of ameloblastoma[2].

Figure 1. large multilocular lesion of mandible

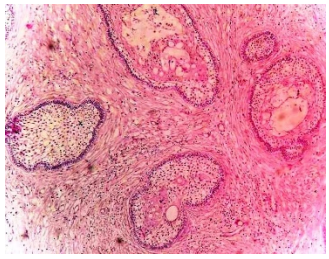

Figure 2. Ameloblastomatous follicele showin granular transformation of stellate reticulul like cells and squamous metaplasia. (Hematoxykin and Eosin stain X20)

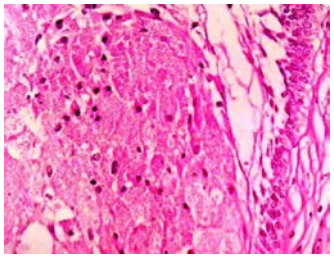

Figure 3. High power view of granular cells (Hematoxykin and Eosin stain X20).

REFERENCES

1. Bajpai M, Agarwal D, Bhalla A, Kumar M, Garg R. Multilocular unicystic ameloblastoma of mandible. Case Rep Dent. 2013; 835892.
2. Reichart PA, Philipsen HP, Sonner S. Ameloblastoma: biological profile of 3677 cases. Eur J Cancer B Oral Oncol. 1995;31B:86-99.
3. Hartman KS. Granular-cell ameloblastoma. Oral Surg Oral Med Oral Pathol. 1974;38:241-53.
4. Hoke HF Jr, Harrelson AB. Granular cell ameloblastoma with metastasis to the cervical vertebrae: observations on the origin of the granular cells. Cancer. 1967;20:991-9.
5. Bajpai M, Pardhe N. Peripheral ameloblastoma with mixed histological patterns. Cukurova Med J. 2015;40 151-5.
6. Gupta S, Grewal H, Sah K. Granular cell ameloblastoma showing desmoplasia. Ann Saudi Med. 2012;32:537–40.
7. Nasu M, Tagaki M, Yamamoto H. Ultrastructural and histochemical studies of granular cell ameloblastoma. J Oral Pathol. 1984;13:448-56.
8. Lapthanasupkul P, Poomsawat S, Chindasombatjaroen J. Investigation of basement membrane proteins in a case of granular cell ameloblastoma. Int J Oral Sci. 2012;4:45-9.