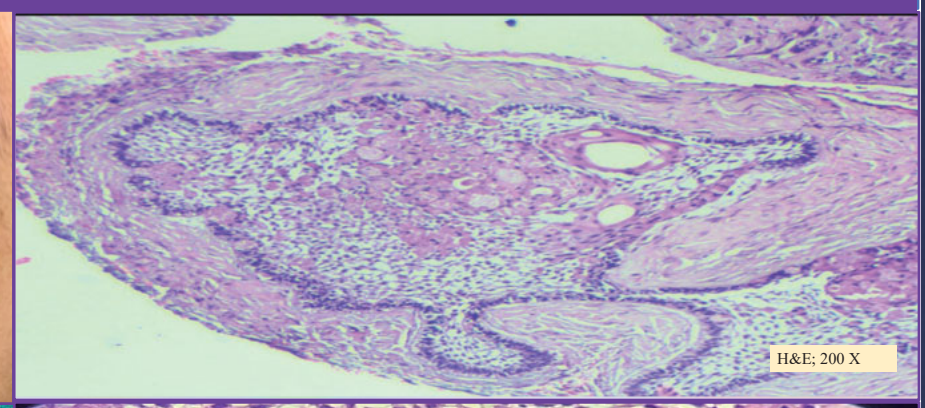
GRANULARITY IN GRANULAR CELL AMELOBLASTOMA : A UNIQUE ENTITY

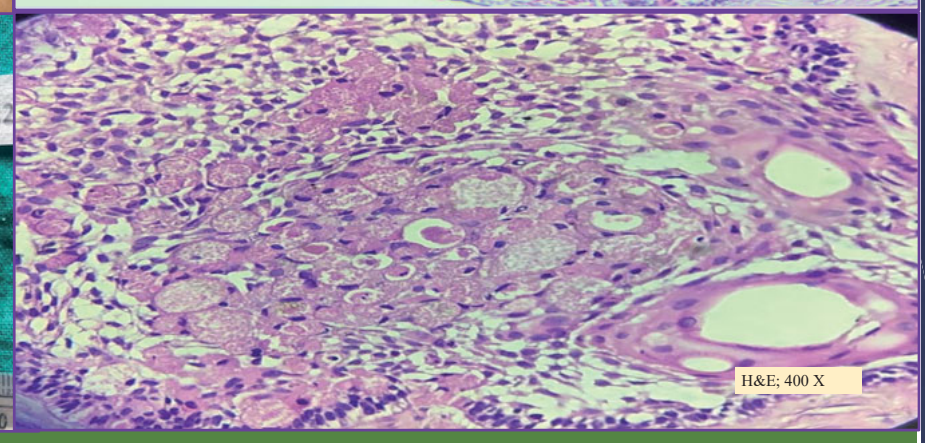
INTRODUCTION

Odontogenic tumours (OT) are a group of heterogenous lesions derived from epithelial and/or mesenchymal elements that are part of the tooth-forming apparatus. Ameloblastoma is well recognized; locally invasive benign neoplasm; 2nd most common, which accounts for about 1% of all oral tumours and about 18% of all odontogenic tumours. Reichart et al. reported a 33.3% recurrence rate for granular cell ameloblastoma, which was higher compared to the more common follicular, plexiform, and acanthomatous subtypes

CASE 1

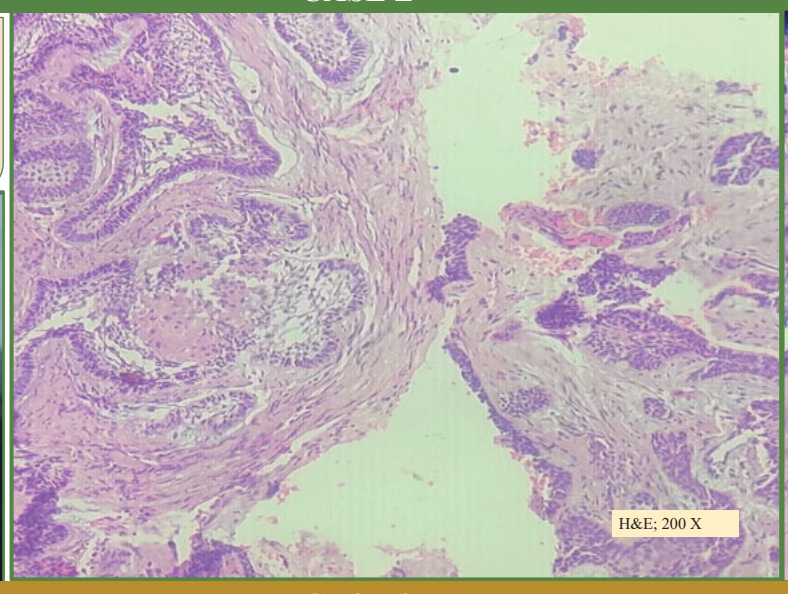
- 17/F
- Swelling on right side of both upper and lower jaw since 2 months
- E/O- Diffuse swelling on right side of face
- Hard on palpation, pain, swelling extends to submandibular region

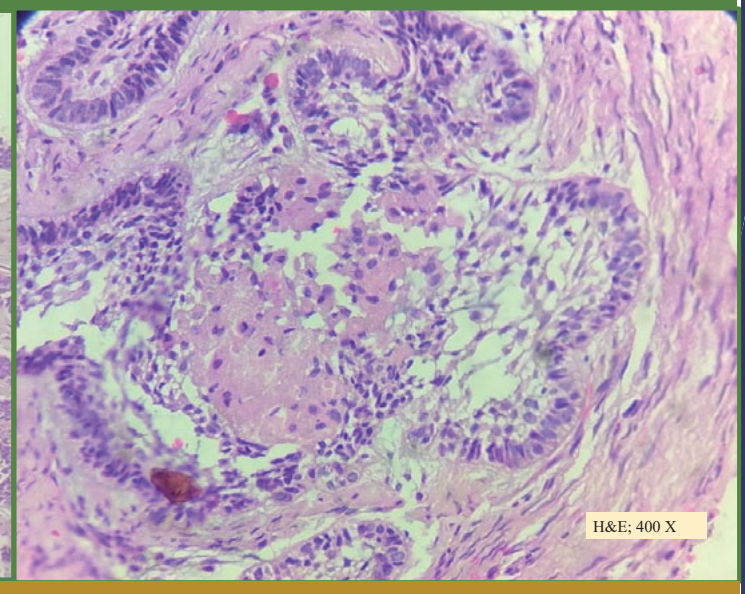




CASE 2

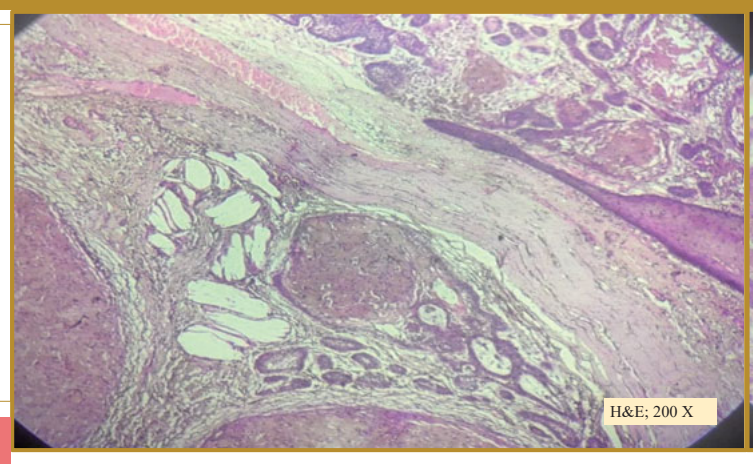
50 yrs / M
Swelling on left side of jaw for 7 months
Pain and facial asymmetry
4cm*2cm

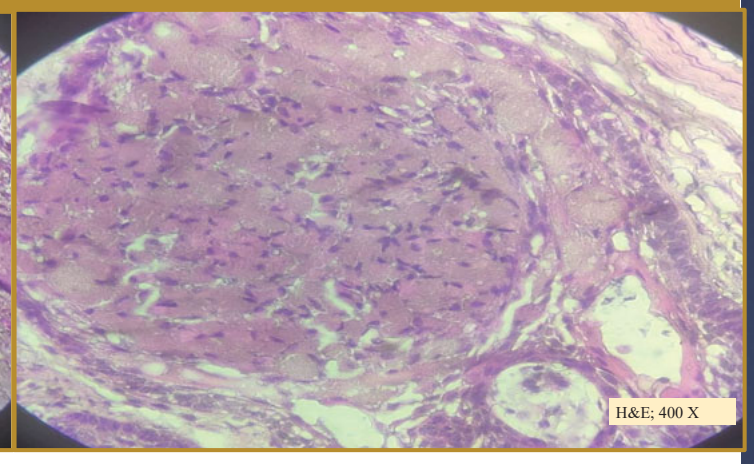




CASE 3

CASE HISTORY
40 years old
Male
CC: soft tissue growth over
Left lower back tooth region for 5 years
Site : left retromolar region
Size : 5*5 cm





REASONS FOR GRANULARITY IN GRANULAR CELL AMELOBLASTOMA

Lysosomal overload in the granular cells

Lysosomal aggregation within the cytoplasm is caused by dysfunction of either a lysosomal enzyme or lysosome-associated protein involved in enzyme activation, enzyme targeting, or lysosomal biogenesis (aging theory)

Increased apoptotic cell death of neoplastic cells and subsequent phagocytosis by neighbouring cells might have caused the cytoplasmic granularity

Ara et.al., suggested that the synthesis of signaling molecules, such as β-catenin and Wnt-5a is upregulated in the granular cells of GCA, but their transportation or secretion is impaired, resulting in their accumulation within granular cells, as autophagosome

CONCLUSION

Granular cell ameloblastoma is diagnosed by the presence of granular cells, which typically occur within the central area of the tumour and progressively replace the stellate reticulum.
They were considered to represent an aging or degenerative process, but recent studies proposed other views to explain the granularity of Granular cell ameloblastoma

REFERENCES
Kumamoto H, Ooya K. Immunohistochemical and ultrastructural investigation of apoptotic cell death in granular cell ameloblastoma. J Oral Pathol Med. 2001 Apr;30(4):245-50. [Medline: 11302245] [doi: 10.1034/j.1600-0714.2001.300409.x]
Dina R, Marchetti C, Vallania G, Corinaldesi G, Eusebi V. Granular cell ameloblastoma. An immunocytochemical study. Pathol Res Pract. 1996 Jun;192(6):541-6. [Medline: 8857640]