



Dentinogenic Ghost Cell Tumor of Anterior Mandible

Garima Rawat*; Hema Malini Aiyer

Department of Pathology, Dharamshila Narayana Superspeciality Hospital, New Delhi, India.

***Corresponding Author(s): Garima Rawat**

Oral & Maxillofacial Pathology, Department of Pathology,
Dharamshila Narayana Superspeciality Hospital, New Delhi,
India.

Tel: +91-9873776634; Email: garima3103@gmail.com

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Clinical image description

Dentinogenic ghost cell tumor is a rare benign but locally aggressive neoplasm characterized by biphasic morphology consisting of a predominant ameloblastomatous proliferation and a less prominent component of basaloid to stellate reticulum cells. The tumour characteristically contains aberrant keratinization, with a variable number of ghost cells and material morphologically resembling dentinoid or osteodentin. DGCT is the rarest of the ghost cell lesions, accounting for < 3% of all cases. The most frequently affected intraosseous sites are the posterior maxilla and mandible, and there is a slight predilection for the mandible.

In our case, the patient was a male in the second decade of his life with an anterior mandible swelling. The patient underwent an incisional biopsy. The histopathological sections showed cystic space lined by 1-2 cell layer thick lining. Cyst wall showed areas resembling ameloblastoma lined by palisaded peripheral basal cells & central stellate reticulum. Focal areas of ghost cell changes were observed in the epithelium with dystrophic calcification. Ghost cells are characterized by the loss of nuclei, preservation of basic cellular outlines, and resistance to degradation. Dentinoid formation was noted at places.



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In DGCT cases, the epithelial cells can express CK5, CK7, CK14, and CK19. The Ki-67 proliferation index is < 5%. CD138 (also called syndecan-1) and MMP9 protein expression have been assessed in tumour and stromal cells, but the number of cases is limited and expression is varied; more studies are necessary to establish the roles of CD138 and MMP9 in the locally invasive nature and biological behaviour of this tumour.

The patient underwent surgical resection of the lesion followed by uneventful healing. The patient is on follow up for last two years and no recurrence has been observed yet.

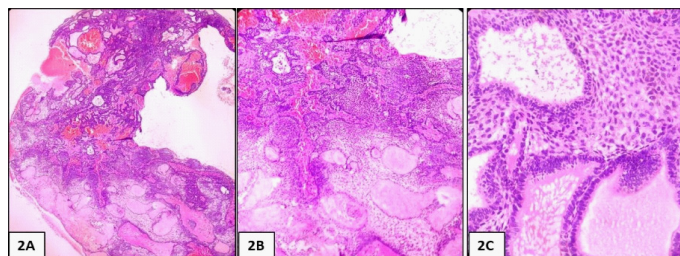


Figure 2: Photomicrograph showing cyst wall lined by ameloblastomatous areas with palisaded peripheral basal cells & central stellate reticulum. (A- HE – 40x; B- HE- 100x; C- HE- 400x)

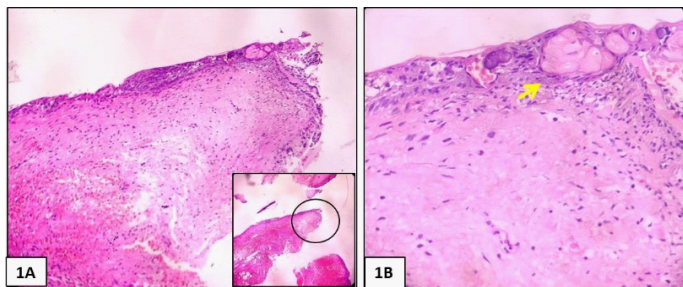


Figure 1: (A) Photomicrograph showing cystic space lined by 1-2 cell layer thick lining. (Inset- HE- 40x; HE- 100x). (B) Photomicrograph showing aberrant keratinization in the form of ghost cells (yellow arrow). (HE – 400x).

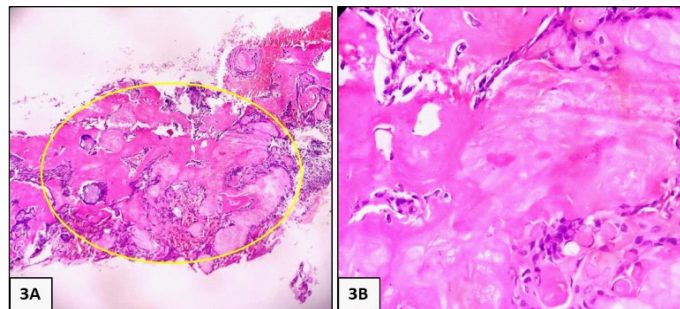


Figure 3: (A) Photomicrograph showing amorphous eosinophilic material ie dentinitoid formation deposition at places. (HE-100x). (B) Photomicrograph showing dentinitoid lacking the tubular structure of normal dentin and appearing as an irregular mass. (HE-400x).