

CASE REPORT

Desmoplastic Ameloblastoma of the Maxilla: A Case Report

Deepti Garg¹, Deeksha Dogra², Swati Gautam³,
Nishat Sankhyani⁴, Satinderpal Kaur⁵

HOW TO CITE THIS ARTICLE:

Deepti Garg, Deeksha Dogra, Swati Gautam, et al. Desmoplastic Ameloblastoma of the Maxilla: A Case Report. Ind J Dent Educ. 2025; 18(3): 135-139.

ABSTRACT

Desmoplastic ameloblastoma (DA) is a rare histological variant of ameloblastoma characterized by unique radiographic and histologic features. It is distinguished by unique clinical, radiological, and histopathological features. This article reports a case of Desmoplastic Ameloblastoma in a 35-year old male patient with a slow growing painless swelling in the right anterior maxillary region. Computed tomography scans shows a well defined, possibly multilocular, expansile, non corticated, isodense, non odontogenic space occupying the lesion of the right anterior maxilla. That does not cross the midline. The present case is special because of the unfamiliar appearance, potentially aggressive nature and high chances of misdiagnosis of the tumor. A surgical enucleation and curettage with peripheral ostectomy was performed. Although this variant occurs rarely a differential diagnosis of the same must be taken into consideration. While previously considered less aggressive, recent evidence suggests DA can exhibit locally destructive behavior and recurrence rates comparable to other ameloblastoma types, necessitating careful surgical management and long-term follow-up.

KEYWORDS

• Desmoplastic Ameloblastoma • DA • Ameloblastomas

AUTHOR'S AFFILIATION:

¹Professor and Head, Department of Oral Pathology and Microbiology, Bhojia Dental College and Hospital, Baddi, Himachal Pradesh, India.

²Junior Resident, Department of Oral Pathology and Microbiology, Bhojia Dental College and Hospital, Baddi, Himachal Pradesh, India.

³Reader, Department of Oral Pathology and Microbiology, Gian Sagar Dental College and Hospital, Baddi, Himachal Pradesh, India.

⁴Reader, Department of Oral Pathology and Microbiology, Bhojia Dental College and Hospital, Baddi, Himachal Pradesh, India.

⁵Senior Lecturer, Department of Oral Pathology and Microbiology, Bhojia Dental College and Hospital, Baddi, Himachal Pradesh, India.

CORRESPONDING AUTHOR:

Deeksha Dogra, Junior Resident, Department of Oral Pathology and Microbiology, Bhojia Dental College and Hospital, Baddi, Himachal Pradesh, India.

E-mail: dogradeekshajdb12394@gmail.com

➤ Received: 24-07-2025 ➤ Accepted: 21-08-2025



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution NonCommercial 4.0 License (<http://www.creativecommons.org/licenses/by-nc/4.0/>) which permits non-Commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the Red Flower Publication and Open Access pages (<https://www.rfppl.co.in>)

INTRODUCTION

Desmoplastic ameloblastoma (DA) is a rare and distinct histological variant of ameloblastoma, accounting for approximately 4–13% of all ameloblastoma cases.¹ It was first described in 1984 by Eversole *et al.* and is now recognized in the World Health Organization's classification of odontogenic tumors. DA differs from conventional ameloblastoma in its clinical, radiological, and histological characteristics, making it a diagnostic challenge for clinicians and pathologists.

Clinically, DA typically manifests as a painless swelling of the jaw, often with buccal extension, and is most frequently observed in the anterior or premolar regions of both the maxilla and mandible. There is a nearly equal gender distribution, with a slight predilection for patients in their fourth and fifth decades of life.² Radiographically, DA is characterized by a mixed radiolucent/radiopaque appearance in 25–70% of cases, often with ill-defined or multilocular borders, which can mimic benign fibro-osseous lesions or even malignant tumors. In large reviews, about 55% of cases present as mixed radiolucent/radiopaque lesions, and up to 64% have poorly defined borders. Tooth displacement is common, and root resorption is reported in about 25% of cases.³

Histologically, DA is defined by extensive stromal desmoplasia, with scattered nests or strands of odontogenic epithelium embedded in a dense, collagen-rich stroma. The typical follicular pattern of conventional ameloblastoma is usually absent, and osteoplasia may be present. The pronounced stromal reaction may reflect a host response to the tumor's infiltrative nature, and ill-defined radiographic borders suggest a potentially aggressive biologic behavior.⁴

This case report describes a rare case of desmoplastic ameloblastoma characterized by its unique radiographic and histological features.

Case Report

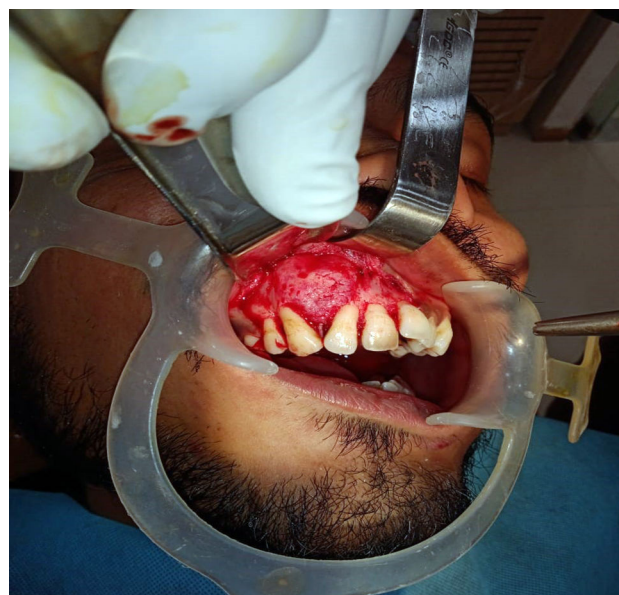
A 35-year old male patient with a an asymptomatic swelling in the right anterior maxillary region since past one and a half year. Since then there had been gradual increase in the size of the swelling to its present size. He denied experiencing any bleeding, pain or sensory changes. There was no history of trauma and past dental and medical history

was also not present. The physical examination reveals facial asymmetry due to swelling on the right side of the face which was oval in shape and had a smooth surface. The skin over the swelling appeared normal. It was not tender on palpation.

On intraoral examination a bony hard lesion of approximately 2.0x1.5x1.5 cm in size present in between 12, 13 teeth reaching up to the nasal floor with perforation of the palatal cortex and bulging of the lesion into the palatal mucosa don't cross midline as seen in figure A and B.



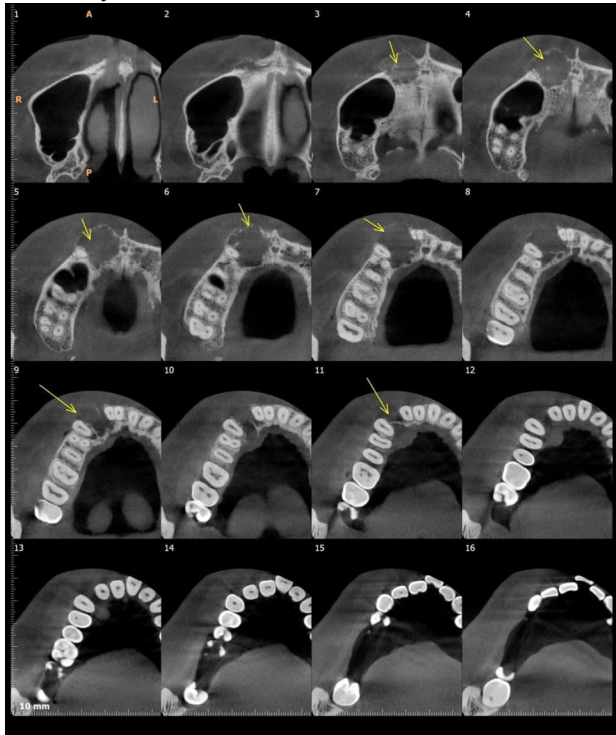
A



B

On palpation, the swelling was non tender and the inspector findings were confirmed. The swelling was bony hard in consistency, non-fluctuant, non-reducible, non-compressible and non-pulsatile. The teeth in the affected

area were not sensitive to percussion and no mobility could be demonstrated.



C

On radiographic examination as seen in figure C, CBCT reveals a well defined, expansile, non-corticated, possibly multilocular isodense lesion of approximately 1.8 x 1.6 x 1.8 cm with displacement of 12, 13 with no root resorption or caries. No scalloping of lesion and borders of lesion shows immature/ partially resorbed internal septations.

Based on the clinical examination, radiographic appearance and histological appearance, a provisional diagnosis of Adenomatoid Odontogenic Tumor (Extrafollicular Type) was given. Surgical enucleation and curettage with peripheral ostectomy was done and tissue was sent for histopathological examination.

Histologically, the H&E stained section as seen in figure D, E and F shows odontogenic epithelial islands interspersed in a fibrous connective tissue stroma. The odontogenic islands are irregularly shaped and compressed to form thin strands. The areas adjacent to the odontogenic epithelium islands show loose myxoid changes however the surrounding stroma shows collagenation. Few constricted blood vessels are also seen. The fibroblasts are flattened with wavy nuclei along with abundance of collagen fibre bundles.

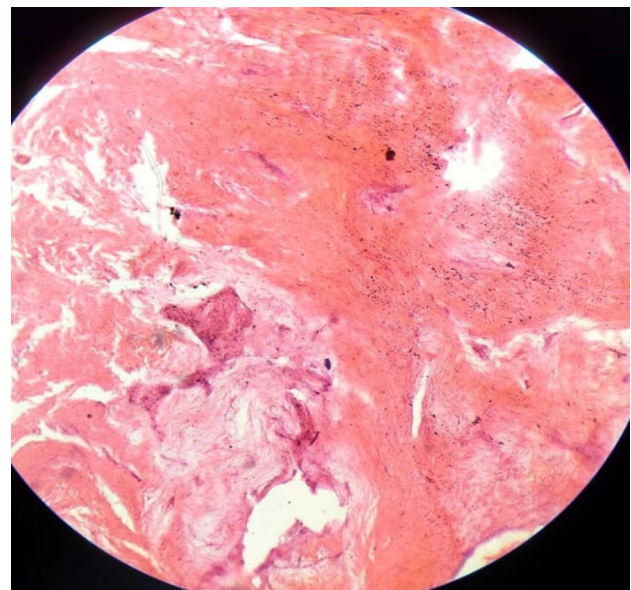


Figure D: Small irregular islands and cords of odontogenic epithelium in a dense collagenous stroma

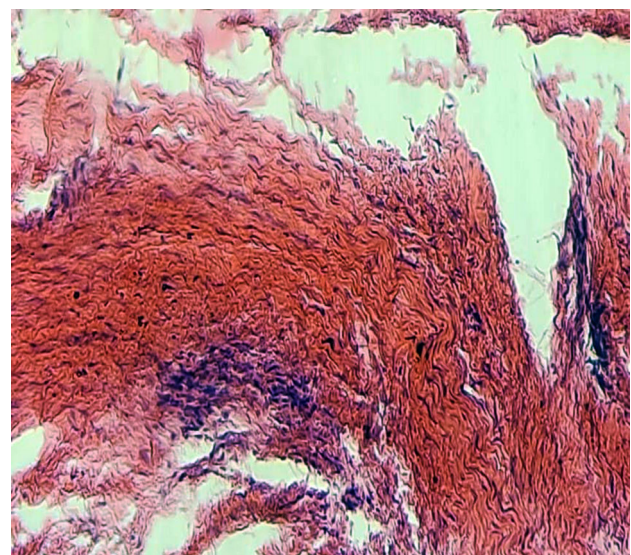


Figure E: Shows flattened fibroblast with wavy nuclei along with abundance of collagen fibre bundles

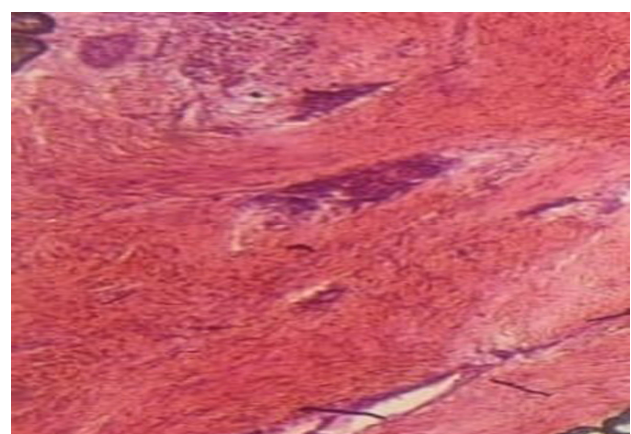


Figure F: compressed epithelium surrounded by desmoplastic stroma

Correlating clinical and radiologic features with histological appearance, a provisional diagnosis of Desmoplastic Ameloblastoma was given.

DISCUSSION

Desmoplastic ameloblastoma (DA) is a rare and unique histological variant of ameloblastoma, accounting for approximately 4–13% of all ameloblastoma cases. It is characterized by specific clinical, radiographic, and histopathological features that often make diagnosis challenging, as illustrated by the case of a 35-year-old male with an asymptomatic, slowly enlarging swelling in the right anterior maxillary region.¹

Clinically, DA typically presents as a painless swelling, most commonly in the anterior or premolar regions of the jaw, with a nearly equal distribution between the maxilla and mandible. The case described demonstrates classic features: a painless, bony-hard, non-tender swelling with gradual enlargement over one and a half years, no associated sensory changes, and no history of trauma.⁵ The swelling was oval, smooth, and caused facial asymmetry, but the overlying skin and mucosa appeared normal a common presentation for DA. Intraorally, the lesion was expansile, perforated the palatal cortex, and bulged into the palatal mucosa, features that reflect the locally aggressive behavior of DA despite its benign histology.⁶

Radiographically, DA is notorious for its variable and often misleading appearance. The lesion is frequently described as mixed radiolucent-radiopaque (55–70% of cases), with ill-defined or multilocular borders, which may mimic benign fibro-osseous lesions or even malignant tumors.⁷ In the present case, CBCT revealed a well-defined, expansile, possibly multilocular, isodense lesion with immature/partially resorbed internal septations and no root resorption. While these features may initially suggest benign lesions such as adenomatoid odontogenic tumor (AOT), the perforation of the palatal cortex and the patient's age are more suggestive of DA's infiltrative potential.⁸

Histologically, DA is defined by extensive stromal desmoplasia marked proliferation of collagenous stroma with scattered nests or strands of odontogenic epithelium. The typical

follicular or plexiform patterns of conventional ameloblastoma are usually absent.⁴ The stroma is dense and may compress the epithelial islands, sometimes accompanied by osteoplasia. These features were not described in the operative report but are essential for definitive diagnosis.⁹

Management of DA remains controversial due to its locally aggressive behavior and tendency for recurrence. Surgical resection with adequate margins is the treatment of choice for large or recurrent lesions, as it significantly reduces recurrence rates compared to enucleation and curettage. In the presented case, enucleation and curettage with peripheral ostectomy were performed, which may be adequate for small, well-defined lesions but carries a higher risk of recurrence for DA, given its infiltrative nature and propensity for cortical perforation.¹⁰ The recurrence rate after enucleation has been reported as high as 21%, compared to only 3% after resection. The average time to recurrence is approximately 37 months, underscoring the need for long-term follow-up.¹¹

CONCLUSION

The Desmoplastic Ameloblastoma is considered as a rare and locally aggressive odontogenic tumor characterized by unique histological and radiographic features, often resembling fibro-osseous lesions. Accurate diagnosis requires histopathological confirmation. Thorough surgical excision and long-term follow-up are essential due to the risk of recurrence. Its distinct features and clinical behavior justify its classification as a separate ameloblastoma subtype.¹²

REFERENCES

1. Bai J.K., Sonia, Midhun N., Divyasree M., Aravind Kumar S., Poornima P. Desmoplastic ameloblastoma in maxilla mimicking fibro-osseous lesion: A case report. *Indian J Microbiol Res.* 2021; 8(4): 333-6.
2. Sharma A., Ingole S., Deshpande M., Meshram D. Retrospective analysis of desmoplastic ameloblastoma: clinical review. *Med Oral Patol Oral Cir Bucal.* 2021 Mar 1; 26(2): e246-e255.
3. Patil S.K., Telagi N., Nair M.R., Mujib B.R.A. Desmoplastic ameloblastoma: A case report. *J Fam Med Prim Care.* 2020 May; 9(5): 2544-7.

4. Savithri V., Janardhanan M., Suresh R., Kumar R.V. Desmoplastic ameloblastoma with osteoplasia: review of literature with a case report. *J Oral Maxillofac Pathol.* 2013 May; 17(2): 298-301.
5. Sun Z.J., Wu Y.R., Cheng N., Zwahlen R.A., Zhao Y.F. Desmoplastic ameloblastoma—a review. *Oral Oncol.* 2009 Sep; 45(9): 752-9.
6. Li B., Long X., Wang S., Cheng Y., Chen X. Clinical and radiologic features of desmoplastic ameloblastoma. *J Oral Maxillofac Surg.* 2011 Aug; 69(8): 2173-85.
7. Koh K.J., Park H.N., Kim K.A. Desmoplastic variant of ameloblastoma of the maxilla: A case report. *Imaging Sci Dent.* 2015 Dec; 45(4): 241-5. doi: 10.5624/isd.2015.45.4.241. Epub 2015 Dec 17.
8. Nair P.P., Bhat G.R., Neelakantan S., Chatterjee R. Desmoplastic ameloblastoma of mandible. *BMJ Case Rep.* 2013 Sep 17; 2013:. bcr2013200082.
9. Astekar M., Rao R., Sanjai K., Sundaragiri K.S., Sapra G., Sanjeevareddygar S., Natarajan S., Odedra S.P. Desmoplastic ameloblastoma: A multicentric study of 18 case series with literature review. *Medical Report.* 2025; 9: 100148.
10. Chrcanovic B.R., Gomes C.C., Gomez R.S. Desmoplastic ameloblastoma: A systematic review of the cases reported in the literature. *Int J Oral Maxillofac Surg.* 2020 Jun; 49(6): 709-16.
11. Lamichhane S.L., Liu Q., Sun H., et al. A case report on desmoplastic ameloblastoma of anterior mandible. *BMC Res Notes.* 2016; 9: 171.
12. Philipsen H.P., Ormiston I.W., Reichart P.A. The desmo- and osteoplastic ameloblastoma. Histologic variant or clinicopathologic entity? Case reports. *Int J Oral Maxillofac Surg.* 1992 Dec; 21(6): 352-7.