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Extensive Compound Odontoma in the Right Maxillary Anterior Region: A Rare Case Report

Godvine, Laxmi Shravya, Sarah Fatima*, Katkam Vishnupriya, Rakesh M, Nikitha M, Indusree K, Shivakumar L, Varsha Ch

Department of Oral and Maxillofacial Surgery, Panineeya Mahavidyalaya Institute of Dental Sciences and Research Centre, India

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***Corresponding author:** Sarah Fatima, Department of Oral and Maxillofacial Surgery, Panineeya Mahavidyalaya Institute of Dental Sciences and Research Centre, India

ABSTRACT

Compound odontomas are benign odontogenic hamartomas composed of multiple tooth-like structures. Although asymptomatic in many cases, they can significantly interfere with normal dental development, particularly by obstructing the eruption of permanent teeth in the anterior maxilla.

This report describes a rare case of a 20-year-old male presenting with delayed eruption of the right maxillary central incisor. Radiographic evaluation revealed a compound odontoma composed of multiple denticles obstructing the eruption path. Surgical enucleation was performed under local anaesthesia, and a total of 35 denticles were retrieved-27 resembling anterior teeth and 8 resembling posterior teeth. Histopathological analysis confirmed the diagnosis of compound odontoma. Postoperative healing was uneventful, and the patient was referred for orthodontic management. This case highlights the importance of early radiographic screening in patients with delayed eruption. The unusually high number of denticles makes this a rare and instructive presentation, contributing to the morphological spectrum of compound odontomas. Surgical excision remains the treatment of choice, with excellent prognosis and minimal recurrence.

Keywords: Compound odontoma; Denticles; Odontogenic hamartoma; Delayed eruption; Maxillary anterior region; Impacted incisor; Surgical enucleation; Tooth-like structures; CBCT diagnosis; Odontogenic tumor

INTRODUCTION

Odontomas are the most common odontogenic tumors, accounting for approximately 22% of all odontogenic lesions [5]. They are classified into two types: compound odontomas, which consist of multiple tooth-like structures (denticles) [1,2], and complex odontomas, which present as irregular calcified masses without resemblance to teeth [3].

Compound odontomas are most often located in the anterior maxilla and are frequently associated with delayed eruption of permanent incisors [4-9]. They are usually discovered during routine radiographic examinations or when patients present with retained primary teeth [8]. Although odontomas are generally solitary, rare cases of multiple odontomas have been documented [1-3].

The etiology of odontomas remains unclear, but proposed factors include trauma, infection, genetic predisposition, and developmental disturbances of odontogenesis [6]. Histologically, compound odontomas contain enamel, dentin, cementum, and pulp tissue arranged in miniature tooth-like structures [7].

CASE REPORT

A 20-year-old male presented to the Department of Oral and Maxillofacial Surgery with a chief complaint of non-eruption of the right maxillary central incisor. The patient was asymptomatic, with no history of trauma, pain, or swelling.

Clinical examination revealed a retained deciduous incisor (tooth 51) and absence of the permanent successor (tooth 11).

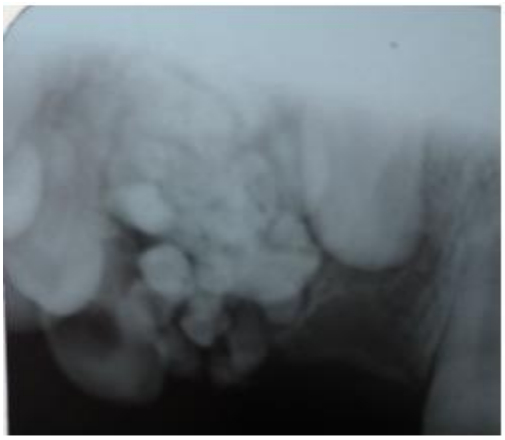

Figure 1: Occlusal view showing the compound odontoma

Figure 2: OPG of the patient showing a compound odontoma on the right anterior maxillary region

The overlying mucosa appeared normal, and no signs of infection or expansion were noted. Radiographic evaluation using intraoral periapical and maxillary occlusal views revealed a well-defined radiopaque mass in the region of 11, composed of multiple discrete tooth-like structures surrounded by a thin radiolucent rim. Cone-beam computed tomography (CBCT) confirmed the presence of numerous calcified structures obstructing the eruption path of the permanent incisor, consistent with a diagnosis of compound odontoma.

Figure 3A **Figure 3B** **Figure 3C**

Figure 3A: After raising the flap
Figure 3B: Exposure of the compound odontoma
Figure 3C: After excision of the odontoma and closure of the flap

Surgical excision was planned under local anaesthesia. After obtaining informed consent and ensuring routine haematological parameters were within normal limits, the procedure was carried out under aseptic conditions. Local infiltration was administered using 2% lignocaine with 1:80,000 adrenaline in the labial vestibule extending from teeth 13 to 23.

A crevicular incision was made along this span, with vertical releasing incisions at 13 and 23, followed by elevation of a full-thickness mucoperiosteal flap to expose the underlying bone. The labial cortical bone overlying the lesion was thinned and carefully removed using a round bur under copious saline irrigation. Upon exposure, a well-encapsulated lesion was identified, consisting of multiple tooth-like structures embedded in a fibrous capsule. The lesion was enucleated in to using periosteal elevators and curettes.

Figure 4: Odontomes retrieved after excision that resemble the anterior and posterior teeth.

A total of 35 denticles were retrieved during the procedure-27 resembling anterior teeth with incisiform and canine-like morphology, and 8 resembling posterior teeth with premolar and molar-like features. The denticles ranged in size from 2 mm to 8 mm and were embedded in a fibrous stroma.

Following complete removal of the lesion, the bony cavity was thoroughly debrided and irrigated with betadine and saline. Haemostasis was achieved, and the flap was repositioned and sutured using 3-0 black silk in an interrupted fashion. Postoperatively, the patient was prescribed amoxicillin 500 mg thrice daily for five days, ibuprofen 400 mg thrice daily for three days, and chlorhexidine mouthwash twice daily. The patient was advised to maintain oral hygiene and follow standard postoperative care instructions. Sutures were removed on the seventh postoperative day, and healing was uneventful. The patient was subsequently referred to the Department of Orthodontics for evaluation.

Histopathological examination of the excised denticles revealed enamel matrix, dentin, pulp tissue, and cementum arranged in a tooth-like architecture, confirming the diagnosis of compound odontoma. This case is remarkable due to the unusually high number of denticles retrieved, far exceeding the average reported in the literature. Compound odontomas are developmental anomalies rather than true neoplasms and are most commonly diagnosed in the first two decades of life. They are frequently associated with impacted teeth and may interfere with normal eruption. Early diagnosis through radiographic screening is essential to prevent complications such as impaction, cyst formation, or infection. Surgical excision remains the treatment of choice, with excellent prognosis and minimal recurrence. This case contributes to the existing literature by highlighting the morphological diversity and extent of compound odontomas and underscores the importance of timely intervention in cases of delayed eruption.

DISCUSSION

Compound odontomas, while benign in nature, hold considerable clinical significance due to their potential to disrupt normal dental development [1,2]. They are composed of multiple tooth-like structures-denticles-formed from enamel, dentin, cementum, and pulp tissue in varying degrees of organization [3]. These lesions are most frequently encountered in the anterior maxilla and are often diagnosed during the first two decades of life, coinciding with the eruption period of permanent teeth [4,5]. The most common clinical presentation is delayed or failed eruption of

permanent incisors, as seen in this case, where the maxillary right central incisor remained unerupted due to obstruction by a large odontoma [6,7].

Radiographically, compound odontomas present as well-defined radiopaque masses with internal tooth-like structures surrounded by a radiolucent halo, representing the follicular space [8]. Advanced imaging such as cone-beam computed tomography (CBCT) can delineate the extent and morphology of the lesion, aiding in surgical planning [9]. In this case, CBCT revealed an unusually large number of denticles-35 in total-making it a rare and instructive presentation. The majority of reported cases in literature describe compound odontomas with fewer than 20 denticles; hence, the presence of 27 anterior-type and 8 posterior-type denticles in a single lesion underscores the morphological diversity and developmental complexity of this entity [2,10].

The pathogenesis of compound odontomas is believed to involve disturbances in odontogenesis, possibly triggered by trauma, infection, or genetic factors [3,6]. Although asymptomatic in many cases, their presence can lead to impaction, malalignment, or cystic transformation if left untreated [1,5]. Surgical enucleation remains the treatment of choice, with minimal risk of recurrence [7,9]. In this case, complete removal of the lesion facilitated the potential for orthodontic alignment of the impacted incisor, emphasizing the importance of timely intervention.

Histopathological confirmation is essential to differentiate compound odontomas from other odontogenic tumors and cysts. The presence of organized denticles with enamel, dentin, and pulp tissue confirms the diagnosis and rules out more aggressive pathologies [4,8]. Postoperative healing is typically uneventful, and long-term prognosis is excellent.

CONCLUSION

Compound odontomas, though benign, can significantly interfere with normal dental eruption and alignment, particularly in the anterior maxilla [1,4]. This case highlights the importance of radiographic evaluation in young patients presenting with delayed eruption. The unusually high number of denticles retrieved-35 in total-makes this a rare and noteworthy presentation, contributing valuable insight into the morphological spectrum of compound odontomas [2,10]. Early diagnosis and surgical management are critical to prevent long-term complications and to restore normal occlusion and aesthetics [5,7]. This case reinforces the role of interdisciplinary care, combining surgical, orthodontic, and radiological expertise to achieve optimal outcomes in odontogenic pathologies [6,9].

REFERENCES

1. Sujeesh Koshy, Jerin M Issac, Riya Baby, Angel M Sajan, Ayush Isac. Multiple Compound Odontoma in a Pediatric Patient: A Unique Case Report. Int J Clin Pediatr Dent. 2025;18(9):1161-1163.
2. Mridula Goswami, Neha Chauhan, Smriti Johar. A Rare Case Report of Unusual Number of Compound Odontomas in a Pediatric Patient. Int J Clin Pediatr Dent. 2024;17(4):497-500.
3. Priyanka Aggarwal, Pallavi Anand. Compound Odontoma in Anterior Maxilla in a 10-year-old Pediatric Patient: Case Report with 44 Denticles Extracted. 2023;6(2):86-90.
4. Geetha CP, Suchithra Muraleedhar Seetha, Gibi Syriac Management of Compound Odontoma Associated with Retained Primary Tooth and Delayed Eruption of Permanent Maxillary Central Incisor

in an 8-Year-Old Girl: A Case Report. International Journal of Science and Healthcare Research. 2025;10(3):132-138.

5. Compound Odontoma Presenting as a Swelling in the Mandibular Premolar Region. Journal of Oral Pathology. 2024.
6. Compound Odontoma Associated with Impacted Maxillary Canine: Case Report and Literature Review Journal of Clinical Imaging Science. 2024.
7. Compound Odontoma in Posterior Mandible: Case Report with Cone Beam CT Findings. Oral Surgery Journal. 2024.
8. Compound Odontoma Mimicking Supernumerary Teeth: Case Report. International Journal of Dentistry. 2023.
9. Compound Odontoma Associated with Unerupted Permanent Incisor: Case Report. Journal of Pediatric Dentistry. 2023.
10. Compound Odontoma in Association with Dentigerous Cyst: Case Report. Journal of Maxillofacial Surgery. 2023.