

COMPLEX ODONTOMA MANIFESTING AS PROGRESSIVE TRISMUS: A RARE PRESENTATION

Karthikeya Patil, Sanjay C. J., Meera Theenathayalan, Varusha Sharon Christopher

Department of Oral Medicine and Radiology, JSS Dental College and Hospital, JSS Academy of Higher Education and Research, Karnataka, India.

The case report highlights a rare presentation of complex odontoma causing progressive trismus and pain in a young adult.

Purpose. To emphasize the significance of early diagnosis and the role of advanced imaging in managing such cases effectively.

Materials and Methods. The case involves a 22-year-old female who presented with a 15-day history of progressive swelling in the right mandibular region, pain, and limited mouth opening. Clinical examinations revealed diffuse, firm swelling with trismus and local signs of infection. Panoramic radiography identified a radiopaque mass near the mandibular third molar and cone-beam computed tomography (CBCT) was used for detailed lesion visualization and to assess its relationship with nearby structures.

Results. CBCT scan demonstrated a well-defined, heterogeneous, radiopaque lesion encroaching upon the mandibular third molar's eruption space. The lesion caused forward deviation of the nerve canal, increasing the risk of nerve damage during surgical removal. The diagnosis of a complex odontoma was confirmed based on radiographic and clinical findings. Surgical intervention was recommended to remove the odontoma and the impacted molar.

Discussion. Complex odontomas are benign tumors that often present as asymptomatic lesions, but they can lead to severe complications like impaction, infection, and trismus. Early detection and comprehensive radiographic assessment are crucial for treatment planning. The case emphasizes the importance of CBCT for accurate diagnosis and risk assessment. Literature review indicates that young adults are commonly affected, and odontomas frequently impede the eruption of third molars.

Conclusions. Timely identification and surgical management of complex odontomas are critical to prevent secondary infections and functional impairments. The case underscores the need for a multidisciplinary approach involving dental specialists and radiologists for effective patient care and favorable outcomes.

Keywords: odontoma, trismus, cone-beam computed tomography (CBCT), mandibular impaction, odontogenic tumors.

Corresponding author: Sanjay C. J., e-mail: drsanjaycj_dch@jssuni.edu.in

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**СЛОЖНАЯ ОДОНТОМА, ПРОЯВЛЯЮЩАЯСЯ ПРОГРЕССИРУЮЩИМ ТРИЗМОМ:
РЕДКОЕ ПРОЯВЛЕНИЕ**

Картикея Патил, Санджай С. Дж., Мира Теенатаялан, Варуша Шарон Кристофер

Кафедра стоматологии и лучевой диагностики, Стоматологический колледж и больница, Академия высшего образования и исследований. Карнатака, Индия.

Описывается редкое проявление сложной одонтомы, вызывающей прогрессирующий тризм и боль у молодой женщины.

Цель исследования. Подчеркнуть важность ранней диагностики и роль высокотехнологичных методов визуализации в выборе эффективной тактики лечения таких случаев.

Материалы и методы. Представлено клиническое наблюдение женщины, 22 лет, которая обратилась с жалобами на прогрессирующее набухание в области правой нижней челюсти, боли и ограничения открывания рта в течение 15 дней. Клинические обследования выявили диффузный, плотный отек с тризмом и локальными признаками инфекции. Панорамная рентгенография (ОПТГ) выявила рентгеноконтрастное образование в области третьего моляра нижней челюсти, а для детальной визуализации поражения и оценки его связи с близлежащими структурами использовалась конусно-лучевая компьютерная томография (КЛКТ).

Результаты. КЛКТ-исследование выявило четко очерченное, неоднородное образование высокой плотности, распространяющееся в альвеолу третьего моляра нижней челюсти. Образование вызвало отклонение вперед канала нижнечелюстного нерва, что увеличило риск повреждения нерва во время хирургического удаления. Диагноз сложной одонтомы был подтвержден на основании рентгенологических и клинических данных. Было рекомендовано хирургическое вмешательство для удаления одонтомы и ретенированного моляра.

Обсуждение. Сложные одонтомы – это доброкачественные опухоли, которые часто бессимптомны, но могут приводить к таким серьезным осложнениям, как ретенция, инфекционный процесс и тризм. Раннее выявление и комплексная рентгенологическая диагностика имеют решающее значение для планирования лечения. Данный клинический случай подчеркивает важность применения КЛКТ для точной диагностики и оценки рисков. Обзор литературы показывает, что чаще всего страдают люди молодого возраста, а одонтомы нередко препятствуют прорезыванию третьих моляров.

Выводы. Своевременное выявление и хирургическое лечение сложных одонтом имеют решающее значение для предотвращения вторичных инфекций и функциональных нарушений. Данный клинический случай подчеркивает необходимость междисциплинарного подхода с участием стоматологов и рентгенологов для эффективного лечения пациентов и благоприятных результатов.

Ключевые слова: одонтома, тризм, конусно-лучевая компьютерная томография (КЛКТ), импакция нижней челюсти, одонтогенные опухоли.

Контактный автор: Санджай К. Дж., электронная почта: drsanjaycj_dch@jssuni.edu.in

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Odontomas are benign jaw tumors, accounting for 22% of all odontogenic tumors. They grow slowly and remain asymptomatic for many years. Histologically, odontomas contain disordered dental tissues [1]. There are two types: compound and complex, with compound odontomas being more common, accounting for 62% of cases, and found in the anterior maxilla, while complex odontomas are more common in the posterior mandible. Odontomas are often found incidentally on routine X-rays and can disrupt the normal tooth eruption, particularly for molars. This can lead to impaction, misalignment, or delayed eruption, with third molars being most affected [2,3].

This case report discusses a rare instance of a complex odontoma obstructing the eruption of a mandibular third molar in a 22-year-old female patient. These benign tumours can cause complications, so early detection and radiographic screening are crucial for effective management. Advanced imaging techniques such as panoramic radiography and cone beam computerised tomography are essential for accurately diagnosing and planning the treatment of complex odontomas. Panoramic radiography is important

for initial diagnosis, while cone beam computed tomography (CBCT) provides detailed three-dimensional visualisation and helps define the size, internal structure, and relationship of the lesion to surrounding vital structures.

Integrating these imaging technologies leads to more accurate diagnoses and better treatment outcomes for odontogenic tumors. This report highlights the significance of utilizing these imaging modalities for diagnosing similar lesions and emphasizes the need for timely advanced imaging in managing odontogenic tumors.

Materials and methods.

Clinical Description. A woman in her early twenties presented with a 15-day history of swelling in the right mandibular area. The swelling gradually increased in size, accompanied by intermittent pain exacerbated by chewing and trismus for the past five days. She had no systemic symptoms.

Diagnostic Assessment.

On extraoral examination, a 5 x 4 cm diffuse swelling was noted on the right angle and body of the mandible. It felt firm to bony-hard and was accompanied by local tenderness and a rise in temperature. Figure 1 shows the extraoral features in frontal and supine position of the patient.

The patient exhibited trismus with a limited mouth opening of 22 mm. During the intraoral examination, a dome-shaped swelling was observed extending from tooth 4.6 to tooth 4.8, with mild tenderness upon palpation. The swelling was firm to hard in consistency and secondary changes like sinus opening and erythema were present. Figure 2 shows the intraoral



Fig. 1 (Рис. 1)

Fig. 1. Photo.

A – frontal position, view of the patient showing diffuse swelling with mild facial asymmetry on the right lower third of the face. B – supine position, diffuse swelling noted on the right angle and body of the mandible on the right lower third region.

Рис. 1. Фото.

А – фронтальный вид пациента, показывающий диффузный отек с легкой асимметрией лица в области нижней трети лица справа. В – положение лежа на спине, диффузный отек отмечается в области правого угла и тела нижней челюсти.

swelling with vestibular obliteration.

After a thorough evaluation of the extraoral and intraoral regions, a provisional diagnosis of an infected dentigerous cyst associated with an impacted tooth 4.8 was made. As trismus was observed, there was a suspicion of infection in the submandibular and pterygo-mandibular spaces.

Results.

An orthopantomogram was then advised for further diagnostic purposes. The orthopantomogram revealed a solid, irregularly-shaped radiopaque mass near the mandibular third mo-

portion of the jaw, encroaching upon the space normally allocated for the development of teeth. Figures 4, 5 illustrate the radiopaque mass with decortication as observed from various views of the CBCT.

Based on the clinical and radiographic findings, the patient was diagnosed with complex odontoma impeding the eruption of the right mandibular third molar.

Therapeutic Intervention. The patient was referred to the Department of Oral and Maxillo-facial Surgery to manage the impacted tooth and associated odontoma.

Follow-up. The patient was scheduled for routine follow-up appointments every six months to monitor the condition and assess for potential complications or changes.

Discussion.

A complex odontoma is a benign calcified tumor that is often asymptomatic but can cause impaction of adjacent teeth, leading to secondary infections [1, 4]. This case involves a 22-year-old female patient with a complex odontoma obstructing the eruption of her mandibular third molar, leading to difficulty opening her mouth (Trismus), and pain. Clinical examination revealed limited mouth opening(trismus), and swelling in the right mandibular angle area, along with signs of infection. A panoramic radiograph showed a well-defined, mixed radiopaque-radiolucent lesion in the right body and angle of mandibular region, associated with an impacted 4.8, characteristic of a complex odontoma. In that line, a retrospective study conducted by Hidalgo-Sánchez et al. reported the average age when diagnosis among patients diagnosed with complex odontomas to be around 20.3 years, with an age range of 5 to 42 years [5]. This finding confirms that complex odontomas are frequently diagnosed during young adulthood, often obstructing the normal eruption of third molars. Salgado and Mesquita reported that odontomas account for about 10% of all odontogenic tumors and are frequently associated with impacted teeth, especially mandibular molars [6].

Early diagnosis and intervention are crucial to prevent complications such as secondary infection and trismus. Arunkumar et al. reported a similar case of recurrent infections and pain due to a complex odontoma associated with an impacted mandibular third molar. Surgical removal of the complex odontoma and impacted third molar was advised in this case to avoid further complications [7]. A systematic review by Azhar et al. evaluated 50 cases of odontomas associated with impacted teeth and reported that third molars were associated in 28% of the cases, which is the second most common association after canines [8]. Complex odontomas are more commonly associated with impacted molars



Fig. 2 (Рис. 2)

Fig. 2. Photo.

Intraoral examination revealed, a dome-shaped swelling extending from tooth 4.6 to tooth 4.8, with mild tenderness upon palpation. The swelling was firm to hard in consistency and secondary changes like sinus opening and erythema was noted.

Рис. 2. Фото.

Внутриротовой осмотр выявил куполообразную припухлость, распространяющуюся от зуба 4.6 до зуба 4.8, с легкой болезненностью при пальпации. По консистенции припухлость была плотной, также были отмечены такие вторичные изменения, как открытие альвеолы и эритема.

lar, with an impacted 4.8 noted inferiorly. Figure 3 shows the radiopaque mass with impacted 4.8 inferiorly.

In order for the lesion to be better visualised and its relationship to surrounding structures, a cone-beam computed tomography (CBCT) scan was recommended. The cone-beam computed tomography (CBCT) scan showed a well-defined corticated lesion consisting of the radiopaque mass with the impacted tooth 4.8. The radiopaque lesion occupies a significant

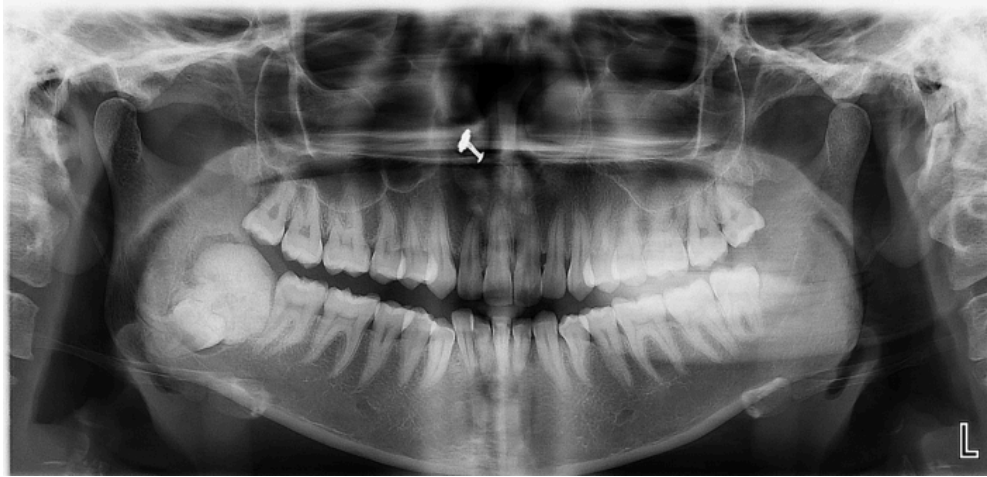


Fig. 3 (Рис. 3)

Fig. 3. Orthopantomogram.

A solid irregularly-shaped radiopaque mass near the mandibular third molar, with an impacted 4.8 noted inferiorly.

Рис. 3. Ортопантомограмма.

Определяется солидное рентгеноконтрастное образование неправильной формы в области третьего моляра нижней челюсти, а также ретенированный зуб 4.8.



Fig. 4 (Рис. 4)

Fig. 4. CBCT. 3D reconstruction.

Revealing the mass in the third molar region with slight decortication of the buccal plate.

Рис. 4. КЛКТ. Трехмерная реконструкция.

Визуализируется образование в области третьего моляра с незначительной декортикацией щечной пластинки.



Fig. 5 (Рис. 5)

Fig. 5. CBCT. Sagittal, axial and coronal sections respectively.

Showed a well-defined corticated lesion consisting of the radiopaque mass measuring roughly about 2x2cm in size with the impacted tooth 4.8 inferiorly.

Рис. 5. КЛКТ. Сагиттальный, аксиальный и коронарный срезы соответственно.

Отмечается четко очерченное образование высокой плотности, окруженное кортикальной пластинкой, размером примерно 2x2 см с ретенированным зубом 4.8 ниже.

compared to compound odontomas. The etiology of complex odontomas is still unknown, though several theories exist [9].

Barba et al. suggested that odontomas may arise from local trauma, infection, or genetic factors that influence tooth development. They noted that disturbances in the odontogenic epithelium during the tooth formation process could be a contributing factor to these lesions [10]. In this case, the CBCT evidenced some internal density variations in the lesion. Complex odontomas commonly present with heterogeneous structures consisting of varying radiodensity [11]. Areas with recognizable dental structure might be present within the mass, which is pathognomonic for complex odontoma. There is a forward deviation of the nerve canal in this case, raising the suspicion of compression or close proximity, increasing the risk of being severed during its extraction [2, 12].

Spatial relationship of the odontoma to the impacted third molar is important for decision-making. Root resorption of adjacent teeth, changes in position of surrounding structures, and nature of surrounding cortical bone should also be assessed [13]. It is also important to consider the nature of the surrounding cortical bone. The mild decortication noted on the lingual aspect is indicative of some loss or thinning of the cortical plate, which may need to be considered from the perspective of surgical access and healing. The thin encapsulation, which is radiolucent in the area of the odontoma, is quite common and accounts for the follicular sac around the lesion. This feature tends to differentiate odontomas from other bony lesions [14, 15]. The overall size, location, and relation to vital structures will guide treatment planning as well as surgical approach and related counseling concerning the associated risks and complications. A detailed CBCT analysis is, therefore, of utmost relevance to the appropriate management of such a complex odontoma case. How to take care of the quality of life in patients with complex odontomas also cannot be underestimated [16, 17].

Although often asymptomatic, cases like the one presented here illustrate that these lesions can be a significant source of morbidity when they obstruct the normal eruption of teeth or become secondarily infected. A research on about quality of life in patients with odontogenic

tumors was done and they found that pain, limitation at opening the mouth, and facial esthetic were among the frequently described problems in patients suffering from odontomas [18, 19].

Giving depth information about such an odontoma is seen to particularly help the healthcare worker, especially the radiologist and the oral health practitioner, to make contributions to all-rounded patient care. Healthcare workers are very important when assistance is needed for diagnostic procedures, even in recognition of clinical signs and symptoms that may be associated with complex odontomas like swelling, trismus, and pain. Being aware of the radiographic appearance of complex odontomas, including mixed radiopaque-radiolucent lesions, will be helpful to make timely referrals to dental specialists. Early detection coupled with liaison with their care plan will be useful in preventing complications such as infection and ensuring better outcomes.

In summary, complex odontomas should be differential diagnoses of impacted mandibular third molars, particularly in young adult patients presenting with infection or trismus symptoms. Therefore, early diagnosis and proper intervention can prevent complications and ensure better results for patients.

Conclusion.

This case report of a 22-year-old female patient with complex odontoma obstructing eruption of mandibular third molar and its resultant complications of secondary infection with trismus, highlights the possible complications that may be caused by these benign odontogenic tumors. It also shows the need for meticulous radiographic examination for any young adult coming for impacted third molars or non-specific oral symptoms. The early diagnosis, associated with proper surgical management in the removal of both odontoma and impacted tooth, would prevent recurrent infections and ensure optimal outcome. Other health care professionals also offer important patient education on various issues connected with post-surgical recovery and long-term care. This case has added to the body of literature on complex odontomas and their clinical implications, underpinning further the need for clinicians to be aware of these lesions within a differential diagnosis of mandibular pathologies.

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