

Mandibular Vascular lesion: A case report of a rare clinical finding

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Abstract

Both radiographically and pathologically, vascular mandibular lesions differ from other mandibular radiolucencies. We identified an involuted vascular lesion revealed by aspiration at the right mandibular premolar area of a 25-year-old female patient during a normal periodontic visit evaluation, with no previous or symptomatic presence or complaint. The lesion's characteristics and differential diagnosis, medical pharmacological therapy are discussed in depth in the hopes of clarifying this unusually rare finding.

Keywords: vascular; mandible; radiolucency.

INTRODUCTION

The clinical history, clinical examination, and imaging studies are used to make a diagnosis of oral vascular malformations.1 For the evaluation of oral vascular lesions, a variety of imaging techniques are available, including computed tomography (CT), magnetic resonance imaging (MRI), angiography, and ultrasonography (US)2. The CT and MRI are common imaging modalities in the disciplines of oral and maxillofacial surgery.3 All imaging techniques, including CT, MRI, and ultrasound, can be used to detect the size of the lesions, however contrast-enhanced MRI and colour doppler ultrasound US Doppler may be more effective at determining the blood flow rate. Angiography can help in the investigation of complicated vascular lesions in bone and soft tissue.4

Accurate diagnosis depends on a complete physical examination and an accurate history5. Pericoronal haemorrhage, tooth movement, and occlusal anomalies are some clinical indicators of vascular diseases of the bone that may not be immediately apparent on clinical examination. This type of lesion typically has a poorly defined radiolucent region on radiographs that looks like a honeycomb or soap bubbles.6

Before conducting any dental extractions, a radiographic evaluation should be conducted. This is crucial because, despite the rarity of these lesions, a vascular malformation of the maxillofacial region might result in a dental emergency and even result in mortality if the lesion is unintentionally disturbed. When the dentist wasn't previously aware of the deformity, such problems generally happen following a dental extraction.

Clinical case presentation

In November 2019, a 25-year-old Saudi Housewife female patient presented to the University Hospital, College of Dentistry, Taibah University, Al- Madinah Al-Munawwrah, Saudi Arabia, with the major complaint of many spaces in the mouth that needed to be treated.

Her previous dental, medical, family history, and general examinations had all come up negative. The patient had, no systemic diseases, no drugs, no hospitalization history, no allergy history, and no significant medical history.

The vital signs were found to be normal. There were no notable findings on extraoral inspection. Temperature: 36.9 C, Blood pressure: 114/76 mmHg, Pulse rate: 85 beats per minute, Respiratory rate: 19 beats per minute.

Extraoral examination revealed no abnormalities in the skin, neck, lymph nodes, or TMJ. Lips were competent, and skin color was normal. Intraoral examination revealed poor oral hygiene, localized severe chronic periodontitis around tooth #16, as well as grossly decayed multiple teeth, spaces in multiple areas, and displaced right premolars and mandibular teeth with very thin alveolar margins and depressed buccal mandibular cortical plate. A gingival examination revealed coral pink gingiva which has a scalloped knife border and a sharp Inter dental papilla. Stippling is absent except in the upper and lower central incisors.

A routine Orthopantomography (OPG) revealed localized periodontal bone loss, multiple grossly decayed teeth, and a Unilocular radiolucent, Smooth round in shape, continuous lesion in the area on the right side of the mandible, located between the roots of premolars 44,45, with large displacement of these teeth's roots and thinning of the buccal cortex. Also, the root of the right premolars mandibular teeth is dilacerated around the lesion (Fig. 1).



Fig.1: Orthopantomogram photograph demonstrating a unilocular radiolucent lesion growing between the lower premolars, causing second premolar dilacerations.

A CBCT scan reveals that tooth #45-44 is severely eroded and misplaced. Tooth #45-44 has a dilacerated root. There is substantial bucco-lingual bone loss, resulting in a knife-edge alveolar bone crest (Fig. 2, 3). Due to the presence of a second layer of cortical bone, this appeared as a radiopaque area mesial to tooth #45. There was intact intrabony thin cortex on aspiration, and profuse red blood was recovered on aspiration (Fig. 4).



Fig.2: Axial cross sectional CBCT cut demonstrating extensive thinning of the mandibular cortices.

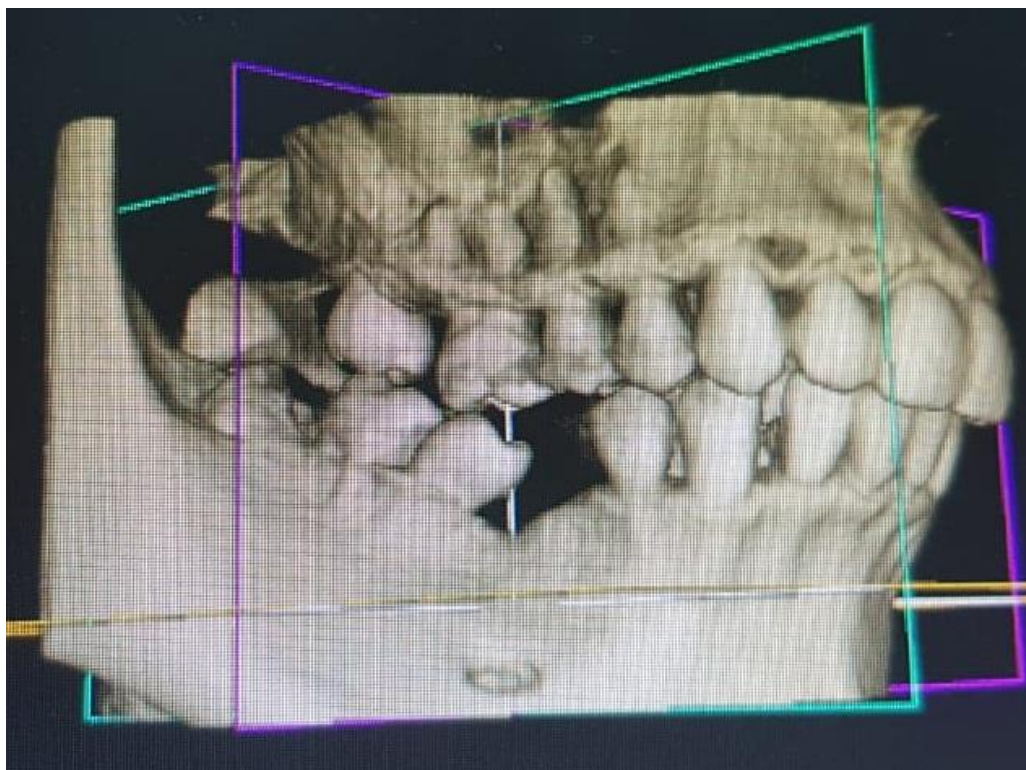


Fig.3: Three-dimensional CBCT revealing a continuous circular lesion between the roots of the premolars on the right side of the mandible, demonstrating significant buccal bone loss.



Fig.4: An intraoral photograph of an aspiration test revealing red blood fluid

A provisional diagnosis of vascular malformation is made based on the history, clinical presentation, orthopantomography, and CBCT. Benign odontogenic cyst or tumour, Odontogenic keratocyst, Lateral periodontal cyst, Calcifying odontogenic cyst, and Ameloblastoma were among the differential diagnoses.

Discussion

Vascular abnormalities are common in the soft tissues of the craniofacial area but are uncommon in mandibular bone.^{4,7} They make up less than 1% of all bony "tumours" and are most commonly found in the vertebral column and calvarium.⁸ Vascular tumors and vascular malformations were distinguished by their clinical presentation, radiological and pathological features, and biological behaviour. Hemangioma is a sporadic true neoplasm of endothelial cell hyperplasia and accelerated mitosis.⁹ The International society for the study of vascular anomalies classification system (ISSVA) is used for vascular abnormalities classification and mainly differentiate between haemangioma and malformations. Each type has particular treatment, and most common malformation is venous.^{10,11}

Infantile congenital haemangiomas are benign and fully formed true neoplasms present at birth, which subsided and regressed normally in the first year without intervention. Women are most affected, which is consistent with the current situation.⁶

Although most mandibular lesions are characterised by swelling or expansion, vascular lesions are different, and in the current adult case, regression and convolution of the lesion occurred and no symptomatic expansion existed, making it appear to be a congenital hemangioma that developed at the site of the mental vasculature between the mandibular right premolars. As a result of the lesion's regression, the mandibular buccal and lingual cortices became very thin.

The present case demonstrates that radiographic pathognomonic techniques are the only method to separate vascular lesions from other mandibular lesions; otherwise, radiographic differentiation is impossible. The radiolucent solitary mandibular lesions that are connected to teeth are typically benign tumors or cyst-like lesions. Asymptomatic focal bone marrow hyperplasia showed no effect on surrounding teeth.

Care for vascular lesions If superficial and not aesthetically problematic, it may continue untreated and recede naturally, or it may require medical pharmacologic therapy, including beta blockers (first line of treatment) and systemic corticosteroids (Intralesional injection of topical corticosteroids).¹² Management of venous malformation (VM), lymphatic malformation (LM), arteriovenous malformation (AVM) included also sclerotherapy, and embolization using interventional radiology.^{11,13}

Surgery is not always completely curative, and some conditions are not always treated surgically. Traditional surgical excision resection with laser therapy or sclerotherapy are two options for surgical removal. Meanwhile recurrence is still possible.¹⁴

The extent of the lesion, any bone involvement, and the associated main arteries can all be better understood with the aid of computed tomography and magnetic resonance imaging. However in order to locate contributing arteries and map out the lesion, super-selective arteriography is crucial.

Therefore, despite being frequently misdiagnosed, vascular malformation is a different pathology from hemangioma. Vascular malformation usually gets worse, hardly showing signs of involution. Biopsy is the only alternative method to distinguish between hemangioma and other abnormalities, but it is not always feasible to obtain.

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