

### **A Unique Case of Intramuscular Phlebolith Over Masseter Muscle**

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#### **Abstract**

#### **Introduction**

Phlebolith are described as intravenous calcified thrombus often associated with vascular malformations /haemangioma. They are most commonly seen in pelvic region followed by head, face and neck region. However, phleboliths not associated with vascular lesion are very rare and could be due to trauma, or resolved haemangioma.

#### **Case report**

A rare case of intramuscular Phlebolith is described not associated with any VM. Patient had history of facial trauma four years prior, and presented with pain on clenching teeth. The Phlebolith was around 1×1 cm in dimension in relation to right Masseter muscle. Enuclation of lesion was done via Risdon's approach, and no recurrence was reported.

#### **Discussion**

Phlebolith not associated with any VM are rare. The Maxillofacial surgeon should have sufficient information about existing pathology; treatment planning and complications associated to rule out any VM/haemangioma; because if incorrectly diagnosed and treated could lead to severe complications.

**Keywords:** Phlebolith, Calcifications, Risdon incision, vascular malformations, Haemangioma, Computed tomography.

#### **Introduction**

Phleboliths are calcified thrombi occurring in veins and are usually associated with vascular malformations, vascular lesions and often with trauma. In literature they have been usually associated with haemangioma, and vascular malformations (VM).

The pelvic region<sup>1</sup> is most commonly affected by phleboliths followed by head, face and neck region. In literature very few cases of phleboliths have been reported not associated with any vascular lesions or vascular malformations.

Presence of Phlebolith like calcification in salivary gland region could be easily misdiagnosed as sialoliths<sup>2</sup> even in absence of swelling not associated with intake of food. In the head, face and neck region Phleboliths should also be differentiated from other calcifications like calcified lymph nodes (usually presenting as large nodes); ectopic tooth germs; calcified acne lesions which are often multiple; and calcifications in cysticercosis (parasitic cyst).

They are calcified crystals which could be apatite or non-apatite calcifications, chiefly composed of calcium carbonate, phosphate, and magnesium salts.

Besides physical examination, histopathology and various imaging modalities such as computed tomography (CT) Scan, magnetic resonance imaging (MRI), Ultrasonography (USG) can be used as an aid in diagnosing Phlebolith calcifications.

We report a unusual case of Phlebolith presenting over right Masseter muscle, not associated with any vascular malformations, clinically misdiagnosed as oral cysticercosis<sup>3</sup> based on eosinophilia, and USG report.

### Case Report

27 years old male presented to our OPD with solitary, moderate sized swelling, semi-firm in consistency, and associated with pain in relation to right angle of mandible region, specially on clenching teeth.

The pin-point sized swelling was first noted 4 years back when he had alleged history of motor vehicular accidents (MVA), which gradually increased to present pea-sized swelling.

Routine blood investigation was done showing eosinophils count as 20, following which USG was done which showed cystic lesion in right Masseter muscle showing hyperechoic foci suggesting parasitic cyst.

Axial computed tomography images revealed radiopaque cystic lesion within the right Masseter muscle (Figure 2). The patient was taken to routine OT, Risdon incision (Figure 1) was given and careful dissection of Masseter muscle was done to expose the cyst. The cystic lesion measuring about 1×1 cm was carefully and meticulously enucleated using artery forceps (Figure 1 inset) under local anesthesia, and was then sent for histopathological examination. Layered closure was done using 3-0 vicryl and 3-0 ethilon sutures.

The patient was treated with amoxicillin and clavulanic acid intravenous antibiotic therapy for 5 days. There was no complication in the follow up visits. Informed consent form was taken from patient.

Final diagnosis of Phlebolith was made based on clinical, histopathological and computed tomography imaging.

### Discussion

Phleboliths are calcified thrombi of veins which appear as multiple calcifications and are almost always associated with some vascular malformations or hemangiomas. Often they are feature of syndromes such as Maffucci syndrome, the Klippel- Trenaunay-Weber syndrome, the Sturge-Weber syndrome and the rubber-bleb naevus syndrome<sup>4,5</sup>

Phlebolith is described as intravenous calcified thrombus, and was first discovered in 1800s, by the anatomist Rokitansky while dissecting the human pelvis<sup>1</sup>. In 1905 Kirmission was the probably first to note a phlebolith in the maxillofacial region<sup>6</sup>

We have reported a solitary Phlebolith present within right Masseter muscle<sup>7</sup> following trauma four years back. The blood investigation of eosinophilia and USG report lead to provisional diagnosis of Oral Cysticercosis<sup>3</sup> (parasitic cyst). The diagnosis of Phlebolith was made based on clinical appearance of whitish, nodule like cyst, semi-firm in consistency; and was correlated along with histopathological findings and Computed tomography imaging.

The radiographic appearance of concentric laminations of radiolucent and radiopaque areas correspond to the alternating low and high mineral content laminations that characterize the histopathological picture of Onion ring like appearance of a Phlebolith<sup>8,9</sup>

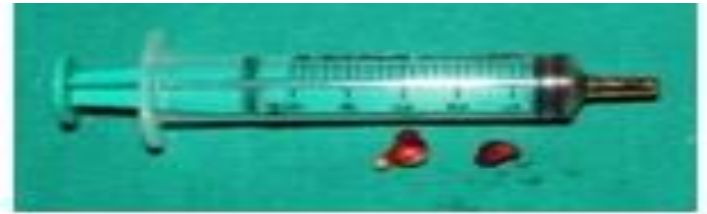
The strategic location of Phlebolith is important to Dentists as other differential diagnosis could be ruled out based on it. Calcification noted in vicinity of the mandibular angle, differential diagnosis may include Intramuscular

haemangioma<sup>10</sup>, calcified lymph nodes, and carotid artery calcification. However the presence of calcification around salivary gland may be diagnosed as sialoliths.

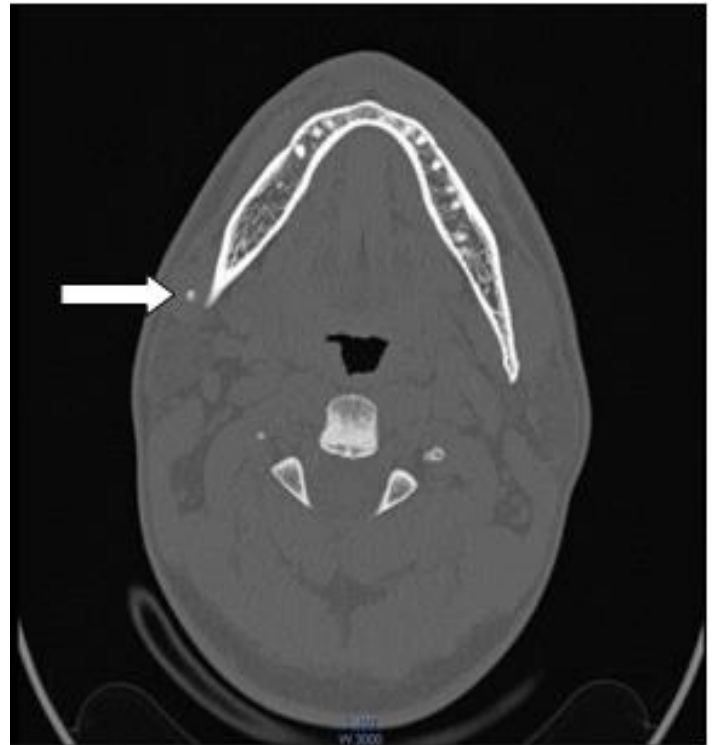
Phleboliths are not known to recur post surgical enucleation, and multiple calcifications present usually indicates associated vascular malformations, intramuscular hemangiomas. In this case report neither vascular malformations/lesions was noted nor did the patient give history of the same in childhood. In scientific literature very few cases of phleboliths in head, and face region are reported which are not associated with any VM. Masseter muscle is inadvertently exposed to trauma in motor vehicular accidents, subsequently leading to rupture of blood vessels intramuscularly, stasis of blood, organization of thrombus, followed by calcification. In the present case report this might be the etiopathogenesis causing Phlebolith in Masseter muscle.

### Figures and Legends

Figure 1: Phlebolith in situ and inset shows dimensions of Phlebolith.



**Figure 2:** Computed tomography image showing radiopaque lesion in relation to right Masseter muscle



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