

## Inverted and Impacted Third Molars – Report of Two Rare Cases with Literature

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### ABSTRACT

**Background:** Teeth start to erupt during infancy and again when the primary teeth are replaced by the permanent teeth. If a tooth fails to erupt or emerges only partially, it is considered to be impacted. This most commonly happens with the wisdom teeth as they are the last teeth to erupt in the oral cavity between 17 to 21 years. An impacted tooth remains stuck in gum tissue or bone for various reasons as in overcrowded regions where there could be no room for them to emerge or if the jaw is too small to fit the wisdom teeth. Teeth may also become twisted, tilted or displaced as they try to emerge resulting in impaction.

**Keywords:** Wisdom teeth, Radiograph, Maxilla, Mandible.

### INTRODUCTION

According to Peterson an impacted tooth is the one which fails to erupt within the dental arch in the expected time<sup>1</sup>. In other words, the tooth is said to be impacted when its path of eruption into the occlusal plane is obstructed by the presence of another tooth, bone or soft tissue, so that further eruption is unlikely<sup>2</sup>. The eruption process is a very complex phenomenon in which multiple factors act synchronously to achieve a normal eruption. However the process might be altered by genetic, molecular, cellular or tissue causes<sup>3</sup>. An impacted tooth is one which is prevented from its normal path of eruption in the dental arch due to lack of space in the arch or obstruction in the eruptive

pathway of the tooth. Impacted teeth may therefore be non-functional, abnormal or pathological. The level of impaction can be determined using Pell and Gregory's

classification as follows<sup>4-7</sup>:

**Position A:** The highest portion of the tooth is on a level with or above the occlusal plane

**Position B:** The highest portion of the tooth is below the occlusal plane, but above the cervical line of the second molar.

**Position C:** The highest portion of the tooth is below the cervical line of the second molar.

**Class I:** There is sufficient space between the ramus of the mandible and the distal side of the second molar for the accommodation of the mesiodistal diameter of the crown of the third molar.

**Class II:** The space between the ramus of the mandible and the distal side of the second molar is less than the mesiodistal diameter of the crown of the third molar.

**Class III:** Complete or most of the third molar is located within the ramus.



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**Fig 1:** Case 1- Mandibular Right impacted inverted third molar.



**Fig 2:** Case 2- Maxillary Right impacted inverted maxillary third molar.

Ectopic eruption is a broadly applied term that may indicate an abnormality of direction during tooth eruption and/or final tooth position. The exact nature and mechanism of ectopic eruption of teeth varies from case to case. Those cases involving ectopic eruption of the maxillary and mandibular canines are attributed to the long eruption path of these teeth; and the particular anatomical form of conical crown and root structure increases its susceptibility to anomalies during eruption. Other factors responsible for ectopic eruption may include abnormal displacement of the tooth bud in embryonic life, crowding, supernumerary teeth, endocrine disorders, hereditary factors and trauma<sup>8-11</sup>. Ectopic development and eruption of teeth into regions other than the oral cavity is rare, although there have been reports of teeth in the maxillary sinus, mandibular condyle, coronoid process, palate, chin, skin and the nasal cavity<sup>12-20</sup>. Teeth have also been found in various unusual locations including the ovaries, testes, anterior mediastinum,

retroperitoneal area and the presacral and coccygeal regions<sup>21</sup>.

### CASE REPORT

**Case 1:** A 28 year old female patient presented with an obscure occasional pain in the lower right mandibular teeth region which was radiating to the right ear. The pain was of continuous dull aching type which did not show presence of any kind of trigger points which eliminated the possibility of presence of Trigeminal Neuralgia or Myofascial Pain Syndrome. There was a presence of metallic bridge in relation to 45,46 and 47 which showed no signs of pain on percussion. There were no signs of periodontal involvement in any of the teeth in the area of pain. An Orthopantomograph (OPG) was taken to assess the status of third molar as well as possible carious lesions in the teeth in that region. No carious lesion was found in any tooth which eliminated the possibility of pain due to reversible or irreversible pulpitis. The status of third molar was assessed which was found to be impacted and inverted (Figure 1). Conservative management and follow up was selected as a treatment option as patient refused for surgical removal. The patient did not turn up for the follow up as the pain subsided.

**Case 2:** A 30 year old female patient presented with a chief complaint of pain on left posterior mandibular region. The pain was present while chewing and aggravated while taking cold. As an accidental finding on OPG the maxillary right third molar was found to be inverted and impacted (Figure 2). There were no signs of any associated symptoms with the maxillary right third molar. There was a class 3 position C impacted mandibular left third molar with missing left maxillary first molar and a fixed prosthesis on lower right posterior region. Patient was advised to undergo prophylactic removal of the inverted maxillary third molar as there are possible chances of cyst formation or the tooth erupting into the maxillary sinus cavity causing sinus related problems but patient refused for surgical removal of the tooth as it was asymptomatic.

### DISCUSSION

Literature search revealed only six cases of inverted teeth reported till date. Among these two were impacted maxillary third molars (Gold and

Demby 1973, Held 1979)<sup>22,23</sup>. In all case reports the management of impacted molars was done conservatively.

As a part of differential diagnosis Myofascial pain syndrome (MPS) was considered also known as chronic myofascial pain (CMP). It is a syndrome characterized by chronic pain caused by multiple trigger points and fascial constrictions. Characteristic features of a myofascial trigger point include: focal point tenderness, reproduction of pain upon trigger point palpation, hardening of the muscle upon trigger point palpation, pseudo-weakness of the involved muscle, referred pain and limited range of motion following approximately 5 seconds of sustained trigger point pressure<sup>24</sup>. Chronic orofacial pain (COFP) is a term used to describe painful regional syndromes with a chronic, unremitting pattern. This is a convenience term, similar to chronic daily headaches, but is of clinically questionable significance. Syndromes that make up COFP require individually tailored diagnostic approaches and treatment<sup>25</sup>. Atypical trigeminal neuralgia (ATN) is a rare form of neuralgia and may also be the most misdiagnosed form. The symptoms can be mistaken for migraines, dental problems such as temporomandibular joint disorders, musculoskeletal issues and hypochondriasis. ATN can have a wide range of symptoms and the pain can fluctuate in intensity from mild aching to a crushing or burning sensation. ATN sufferers have a constant migraine-like headache and experience pain in all three trigeminal nerve branches. This includes aching teeth, ear aches, feeling of fullness in sinuses, cheek pain, pain in forehead and temples, jaw pain, pain around eyes and occasional electric shock-like stabs. Unlike typical neuralgia, this form can also cause pain in the back of the scalp and neck. Pain tends to worsen with talking, facial expressions, chewing and certain sensations such as a cool breeze. Vascular compressions of the trigeminal nerve, infections of the teeth or sinuses, physical trauma or past viral infections are possible causes of ATN<sup>26</sup>.

Third molars in both the mandible and maxilla may develop at a distance from their normal location because of unusual proliferation of odontogenic epithelium before development of tooth germ<sup>23</sup>. In the mandible, the most common location of such third molar is in the ascending

ramus. In the maxilla the teeth may be displaced as far as the floor of the orbit. Access to such displaced and inverted maxillary teeth can be a problem<sup>22</sup>. The occasional need to remove these intact teeth is by sectioning which may lead to a greater amount of bone removal and surgical complications e.g. sinus communication, displacement of hard tissue fragment into the sinus, nose or the infratemporal fossa.

Removal of an inverted tooth is more complicated than of a simply impacted tooth because of its deeper position<sup>27</sup>. Moreover studies have revealed healing to be deficient in these cases<sup>28</sup>. Loss of bone would be a major disadvantage since these teeth are completely impacted in the bone. Inverted impactions should be weighed carefully and communicated to the patient. However there appears to be little justification for the extraction of pathology-free impacted third molars<sup>29-31</sup>.

#### CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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