

## Dental Heterotopy – a clinical case report

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### Abstract

#### Aims

Literature review regarding inverted teeth. Presentation of a significant clinical case.

#### Introduction

Inverted teeth are heterotopic teeth (teeth placed at distance from the dental arch), whose roots are reverted (toward the alveolar ridge).

This condition may affect primary, permanent and supernumerary teeth.

Although the inverted teeth rarely do erupt, it mentions their eruption, sometimes, in maxillary sinus, hard palate, nasal cavity.

These abnormal teeth are associated with: lip/palate cleft, trauma, maxillary infections, lack of space, dense bone, developmental disturbances of the tooth bud.

Common clinical signs and symptoms are: headaches, fever, facial pain, nasal obstruction, epistaxis, sinusitis, oral fistulas and facial asymmetry.

#### Material and method

The presented clinical case is: a 9 years old patient with several dental anomalies. Periapical radiography 6.5 have relieved the presence, in the maxillary bone, of an inverted premolar, which began to form its root toward the alveolar ridge. The treatment has consisted in a surgical removal of the inverted tooth.

#### Conclusions

Clinical and radiological examination states the diagnosis. When the condition is asymptomatic, these heterotopic teeth could be found by a routine radiography.

Key-words: inverted teeth, heterotopy, reverted roots.

### Introduction

Dental eruption is a complex physiological process, in which the tooth migrates from its intraosseous developmental place, to the alveolar ridge. [1]

The odontogenesis disturbances may have as result dental developmental changes regarding the number, the size, the shape, the structure and the eruption position of the teeth. [2]

### Terminology

Heterotopy represents a deviation from the natural position of a tooth placed at distance from the dental arch, which may/or may not erupt there. [3]

Inverted teeth are heterotopic teeth, whose roots are reverted (toward the alveolar ridge).

### Frequency

Heterotopy may affect primary, permanent and supernumerary teeth. [4]

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The teeth which are more frequent affected by this anomaly are: bicuspid, incisors and third molars and supernumerary teeth. [4]

Eruption of an inverted tooth is a rare condition. It mentions their presence in: maxillary sinus, palate (more frequent) [5], nasal septum [6], mandibular condyle, coronoid process, eye pit [2, 7], facial skin (seldom). [7]

### **Aetiology**

Heterotopic teeth are produced by genetic and environmental factors. The conditions associated with an increased prevalence of inverted teeth include: lip and palate cleft [8], trauma, cysts, maxillary infections, lack of space, dense bone [4]. Inverted teeth are frequently caused by developmental disturbances with an inverted location of the tooth bud [9].

### **Clinical aspects**

The axis of the heterotopic teeth may be horizontally or vertically, and their roots may be directed normal or reversed, toward the dental arch.

Common clinical signs and symptoms of the teeth placed at distance from dental arch are: prolonged facial pain, headaches, fever, facial asymmetry, nasal obstruction, recurrent epistaxis, fistulous tracts to the mouth, abnormal bony swollen, recurrent sinusitis. [10, 7]

### **Diagnosis**

Clinical and radiological examination states the diagnosis. Sometimes there are necessary special radiographies (ortopantomography, computed tomography), but always the careful evaluation of the clinical symptoms and signs are very important. [10] When the condition is asymptomatic, the heterotopic teeth could be found on a routine radiography. [10]

### **Treatment**

The treatment consists in surgical removal of the tooth (transnasal endoscopy, Caldwell-Luc operation) [4, 2, 7] or sometimes, only in

the case of asymptomatic teeth, in radiological follow-up to evaluate the relative position of this tooth in the jaw bone and its potential interference with neighbouring teeth or anatomic structures. [4]

### **Clinical Case**

The 9 years old patient R.M. came in our Department because of several missing permanent teeth.

Necessary diagnosis investigations:

#### ● Clinical investigations:

- general examination: paediatric and endocrinologic examination

- oral examination distinguishes: localized delayed eruption, absence of all mandibular permanent incisors and of the upper lateral permanent incisors (Fig.1), the primary mandibular incisors are present on the dental arch (they are very worn-out) (Fig.2), the alveolar ridge is narrowed in the affected areas and the space in the dental arch is reduced; all these signs indicate a possible congenital missing of teeth.

#### ● Paraclinical investigations:

- general investigations: EKG, cardiac ecography, fist radiography (Fig.3), chest radiography, hormonal dosing

- ortopantomography distinguishes: lack of six permanent teeth and an inverted premolar in the second quadrant (Fig.4)

- periapical radiography 6.5 relieves the presence high up in the maxillary bone of an inverted premolar which began to form its root toward the alveolar ridge, being in eruption (Fig.5)

After performing of these general and oral, clinical and paraclinical investigations, the following diagnosis was stated:

#### 1. General diagnosis

- congenital cardiac malformation (large aortic stenosis)

- mild hypothyroidism

- failure of thrive (height and weight deficit).

#### 2. Oral diagnosis

- hypodonty (congenital missing of six permanent teeth)

- inverted tooth (2.5) symptom-free
- Angle II/1
- aesthetic and phonetic disturbances

### Treatment

1. General treatment
  - a. endocrinological treatment
  - b. prophylactic treatment and close medical supervision for the cardiac disease
2. Dental treatment
  - a. the removal of 6.4, 6.5 (Fig.6) and of the inverted tooth by intraoral approach (Fig.7, 8)
  - b. orthodontic treatment, that includes watching of the teeth eruption and closing of the spaces

### Conclusions and discussions

The inverted teeth are heterotopic teeth rarely founded in the common clinical prac-

tice. Their roots grow toward the alveolar ridge. These teeth may interfere with eruption of permanent teeth or may not, the patient being symptom-free, like in the presented case. Considering clinical examination, medical and dental history as well the scientific evidence, the cause of the inverted eruption in the presented case was, most likely, a developmental abnormality with an inverted location of the tooth bud. The reversed tooth was been accidentally found on an ortopantomography, which was made to establishing the cause of several missing permanent teeth. The early diagnosis and removal of the affected tooth, before it became symptomatic, has permitted the prevention of several complications like its potential interference with neighboring teeth or anatomic structures.



Fig. 1 Absence of 1.2, 2.2



Fig. 2 Mandibular dental arch



Fig. 3 Fist radiography



Fig. 4 Ortopantomogram - R.M., 9 years old



Fig. 5 Periapical Rx 6.5



Fig. 6 Surgical removal of 6.4, 6.5

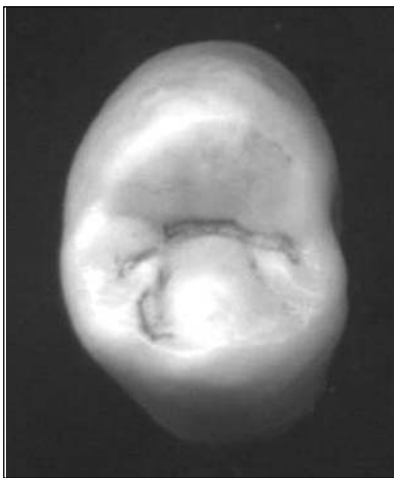


Fig. 7 2.5 - occlusal view

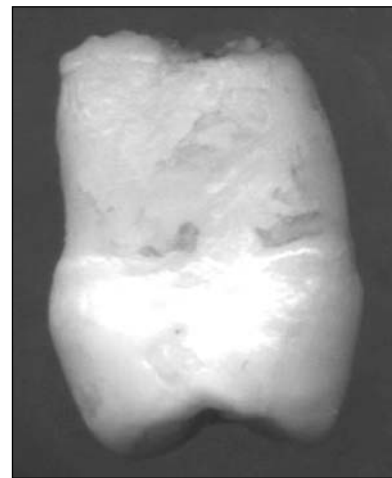


Fig. 8 2.5 - lateral view

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