MANAGEMENT OF AN ECTOPIC PERMANENT LATERAL INCISOR IN A CHILD'S CHIN

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Abstract

Introduction: Tooth eruption anomalies occur in both temporary and permanent teeth. They also affect all maxillary and mandibular teeth, in particular the incisors. Localization outside the maxilla is a rare phenomenon, with psychological, functional and above all aesthetic consequences. In traditional African society, mystical considerations can be evoked to explain it. The aim was to manage an ectopic permanent incisor located on the chin, in order to avoid the disturbances that can occur in children. **Case presentation**: This was an 11-year-old child whose lower permanent incisor had erupted outside the mandibular bone, in the cellular tissue of the chin arch, outside the chin and lower lip muscles. **Treatment:** it consisted of extraction of the affected tooth, followed by suturing of the wound and antibiotic therapy. This treatment not only restored aesthetics and function, but also prevented the marginalization of the young patient. **Conclusion**: This case study highlights the need for aesthetic, psychological and functional management to ensure the patient's well-being and overall development.

Keywords: permanent incisor, ectopic eruption, chin, aesthetics, functional rehabilitation.

INTRODUCTION

Tooth eruption anomalies are numerous and occur in both temporary and permanent teeth. They also affect maxillary and mandibular teeth. Dental eruption anomalies may result from abnormal tissue interaction during odontogenesis (dental development anomalies), traumatic or iatrogenic causes, infectious causes (dental cyst, odontoma), idiopathic causes, dental crowding, genetic or environmental factors [1,2,3,4]. Among the multitude of eruption anomalies, there is the ectopic tooth eruption anomaly. In this case, the tooth erupts outside its usual site [1-3]. The mandible is the most affected [1,4]. Among the teeth most prone to ectopic eruption are the lower permanent lateral incisors. These may have a distally oriented eruption path [5]. According to the literature, ectopic eruption of a tooth may occur in the periodontal region, but also in more distant sites such as the coroneum, condyle, nasal septum, maxillary sinus, palate or chin [1,4,6]. Localization outside the maxilla is a rare phenomenon, with psychological, functional and above all aesthetic consequences. In traditional African society, mystical considerations may be

invoked to explain it. All these reasons argue in favor of aesthetic, psychological and functional management for the patient's well-being, thus ensuring good overall development. Hence the interest of this study, whose objective was to ensure the management of this ectopic permanent incisor located in the chin.

CASE PRESENTATION

The case concerned an 11-year-old male child who came to the clinic for aesthetic reasons related to the presence of an anterior tooth that had erupted outside the oral cavity. He had been admitted to the regional hospital in Ferkéssédougou, a department in the Savannas region of northern Côte d'Ivoire.

Questioning revealed that the presence of the tooth, outside the mandible and visible, was a source of disturbance to the child's psychological equilibrium, and also a source of worry for his parents. The child refused to go to school, was introverted and withdrawn. However, he was apparently in good general health, and his vaccination schedule was up to date, particularly for tetanus.

Extra-oral examination of the child showed a lower permanent incisor erupting out of the mandibular bone, into the cellular tissue of the chin arch on the left side, outside the chin and lower lip muscles (Figure no.1). The mucosa around the tooth showed scar tissue due to a failed extraction attempt.

Intraoral and radiographic examinations revealed a young permanent dentition, with a large diastema between the central incisor and the canine of the left mandibular hemiarch, visible on frontal teleradiography (Figure no. 2). The radiograph also revealed the presence of an anatomical structure in the form of an anterior tooth on the chin. On the profile X-ray, this anterior tooth was ectopically positioned, contrary to the eruption axis of the teeth. It was located at chin level, crossing the cellular tissues of the chin arch, as well as the chin and lower lip muscles (Figure 3). The mandibular permanent central incisors were slightly malpositioned. The presence of an incisor-like anterior tooth on the chin, the absence of the lower left permanent lateral incisor on the arch and the existence of a diastema between the central incisor and the canine on the radiograph, led to the diagnosis of an ectopic permanent lateral incisor outside the mandible.

Figure 1: Ectopic eruption of an incisor outside the chin arch

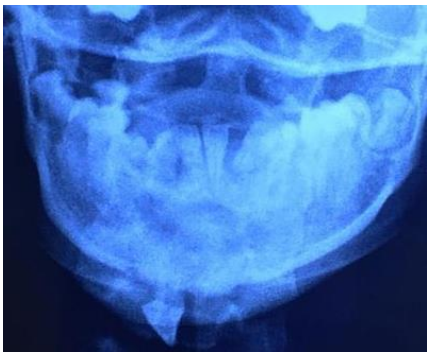

Figure 2: frontal teleradiograph showing a large diastema between 31 and 33 in the mandible, and the ectopic position of 32

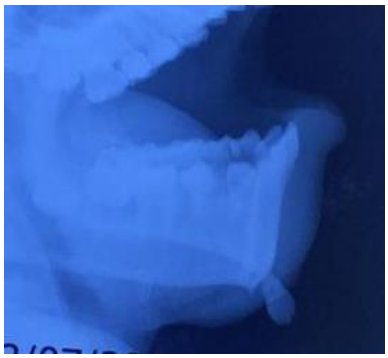

Figure 3: Profile teleradiograph showing the ectopic incisor protruding through the soft tissue of the chin

Management consisted in extracting the affected tooth (Figure 4), which left an opening at the extraction site (Figure 5). One week prior to surgery, antibiotic prophylaxis was initiated. This consisted of a combination of amoxicillin and metronidazole at a dose of 50 mg/Kg weight/24h. After extraction of the ectopic tooth, suturing was performed using skin suture (VICRYL), polyglactin 910 purple multifilament with a round ½ tapered tip needle. The avulsion was followed by recommendations to continue taking antibiotics and the application of a topical antibiotic, Baneocin® ointment (Bacitracin/Neomycin) to the open wound at the extraction site. The wound began to heal at one week and again at two weeks post-op (Figure 6).

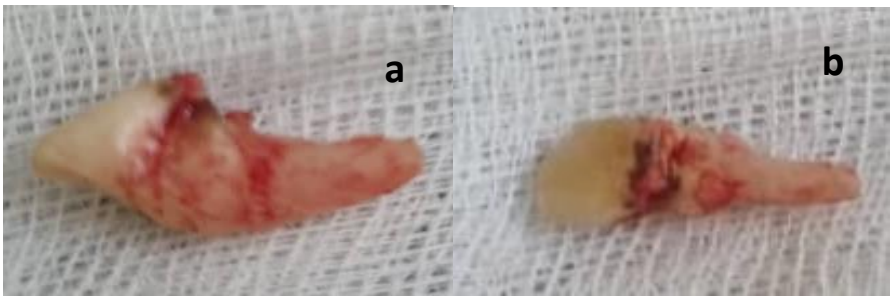

Figure 4 a and b: proximal (a) and lingual (b) views of the permanent lateral incisor

Figure 5: extraction site

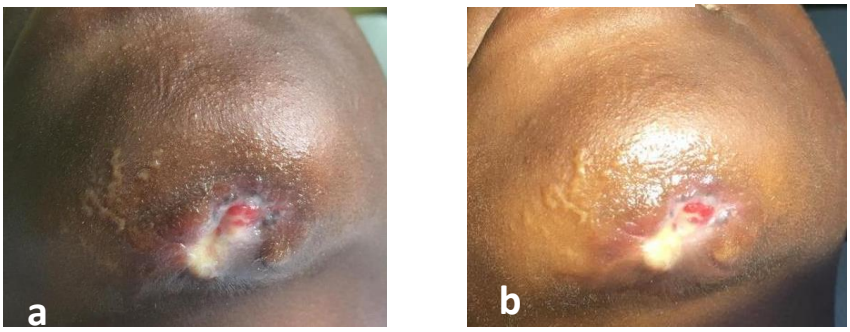

Figure 6: wound healing at one week (a) and two weeks (b)

DISCUSSIONS

A- Location and etiology

The clinical case presented showed a permanent lateral incisor in an ectopic position in the chin arch. According to the authors, the abnormal migration or ectopic position of the tooth occurs in the periodontal region or at a more distant site, but very often within the maxillae [1-3]. Contrary to the literature, this clinical case presents a lateral incisor that has erupted outside the mandibular bone, crossing the cellular tissue of the chin arch and the chin

and lower lip muscles. This extraosseous migration of the tooth is an exceptional and rare phenomenon. Ectopic tooth eruption can be caused by trauma-induced displacement of the tooth germ, infectious factors (cysts and tumours), abnormal tooth germ development and dental crowding [1,4]. In our case, the cause of the lateral incisor's deviation from its eruption path could not be determined, as no traumatic factors or radiographically detectable anomalies in tooth development (odontoma) were present. Thus, LAMBADE P et al. quoted by MERT AKBAS [1], stated that in most cases, the etiology of an ectopic tooth eruption remains unknown.

B- Psychosocial consequences

The existence of the extraoral ectopic tooth was unsightly and gave the child an abnormal appearance. Indeed, the location of the permanent lateral incisor outside the mandible at the level of the chin arch had an impact on the child's relational and school life. Between the ages of 6 and 12, the school-age period is marked by a major step forward in socialization [7]. The child's behavior becomes more reflective, and group life takes on vital importance. At this stage, children, especially boys, show off and measure themselves against their friends. The presence of an ectopic tooth visible outside the oral cavity in a child during this period is unsightly and creates a tendency to withdraw, to isolate, to stand aside for fear of mockery from friends, and even to refuse to go to school, as observed in this case. This profoundly disrupts his social development. In addition, this clinical case was subject to various superstitions, as in traditional African society, this tooth location was explained by mystical considerations. In Africa, children with this type of anomaly are likened to sorcerers and bringers of misfortune, as has already been reported for neonatal teeth [8,9]. After raising awareness, motivating and reassuring the fearful parents, they accepted therapeutic treatment for their child.

C- Clinical and therapeutic aspects

Moving a tooth to an unusual site can be done without disturbing the normal development of the tooth, as in the clinical case presented. This mature ectopic permanent incisor had a fully formed root. The root formation was in the opposite direction to the eruption axis. This could be explained by the orientation adopted by the germ as a result of known or unknown etiological factors. Indeed, in NOLLA stages 5 and 6, which are the coronal formation stage, the dental germ rolls easily into the follicular sac [10]. Disruption of the lateral incisor germ at this stage could cause it to move towards the chin, continuing its root formation. Root formation continued, following the movement of the crown. Profile and frontal teleradiographs showed the chin position of the tooth and its relationship with the inferior dental canal, the chin nerve, the chin muscles and the lower lip depressor muscles. The decision was taken to extract the tooth, contrary to some authors who have shown that ectopic teeth can be placed on the arch [11]. Indeed, moving the tooth from its unusual site on the arch would cause apical problems such as fenestrations and periodontal problems such as absence of attached gingiva [11].

Avulsion of the tooth under local anaesthetic required a simple, uncomplicated and less invasive method of

extraction. This extraction was performed extra-orally, as in the clinical case, the tooth had erupted outside the maxilla. On the other hand, some authors believe that intra-oral extraction should be preferred to extra-oral extraction because of the aesthetic results [1]. This is to preserve the quality of life of patients in general and children in particular.

This clinical case highlighted the need for aesthetic, psychological and functional management for the patient's well-being. Indeed, aesthetics were restored, functions were restored and the child's psychology was improved, ensuring good overall development. What's more, the treatment prevented the young patient from being marginalized.

CONCLUSIONS:

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