

### Bilaterally Impacted Supplemental Premolar: A Case Report and Review of the Literature

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#### Abstract

**Background:** It has been described as interesting to encounter supplemental teeth, as the condition rarely occurs. The purpose of this report is to add to the scanty literature on the subject of supplemental teeth and to emphasize the significance of full-mouth radiograph for every patient at the initial dental consultation.

**Method:** A case of an 18 year old young lady with incidental finding of bilaterally impacted supplemental premolar is presented together with a review of the literature

**Result:** The patient presented with a recurrent history of toothache and palatal swelling of 1 year duration in relation to a slightly discoloured upper left central incisor. Examination revealed an incidental finding of bilaterally impacted supplemental premolar causing pressure effect on adjacent teeth.

**Conclusion:** A full mouth clinical and radiological examination of every patient presenting at the dental clinic for the first time should not be taken for granted.

**Key words:** Supernumerary teeth, supplemental teeth, impacted premolar

Date accepted for publication 12<sup>th</sup> June 2008

Nig J Med 2008; 363 - 365

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#### Introduction

Supplemental teeth are extra teeth that are of normal shape and Size; hence, they resemble the teeth with which they are closely associated.<sup>1</sup> This is in contrast to additional teeth of abnormal form commonly referred to as supernumerary teeth.<sup>2</sup> Sometimes, however, supernumerary teeth are used loosely to refer to either of the above.<sup>3,4</sup> Supplemental teeth may be erupted or impacted.<sup>4</sup> An impacted tooth is one that is embedded in the alveolus so that its eruption is prevented or the tooth is locked in position by bone or the adjacent teeth.<sup>5,6</sup> It has earlier been described as interesting to encounter supplemental teeth as the condition rarely occurs.<sup>3</sup> Various presentations<sup>1,2,3</sup> of supplemental teeth have been described as case reports in the literature. These include: inversion<sup>7</sup> (downward eruption); invagination<sup>8</sup>; single; multiple; unilateral and bilateral eruptions in one or both

jaws.<sup>3</sup> The present report is a case of bilateral impaction with pressure effect upon the adjacent mandibular teeth. The objective of the current report is to add to the scanty literature existing on supplemental teeth and to emphasize the significance of full-mouth radiograph and detailed clinical examination at the initial dental consultation.

#### CASE REPORT

An 18-year-old lady presented at the Conservative clinic of the University of Port Harcourt Dental Centre with a recurrent history of toothache and palatal swelling of 1 year duration in relation to a slightly discoloured upper left central incisor. On clinical examination, she had a full dental complement. There were occlusal caries on lower right and left 2<sup>nd</sup> molars and the upper left central incisor was slightly discoloured, tender and mobile. The occlusion appeared normal but there was a slight distal inclination of the first right and left lower premolars. Careful examination revealed barely visible cusps of an impacted tooth on either sides of the jaw in relation to the lingual aspect of the first lower premolar. The contours of the impacted premolars could not be palpated because each was embedded in a bulbous lingual cortical bone plate giving a false impression of mandibular tori. The tongue and the floor of the mouth were clinically normal and the oral hygiene was good. There were firm, tender but slight elevations of the palatal mucosae in relation to the offending teeth.

Figure 1: Left mandibular supplemental premolar



**Figure 2:** Right supplemental premolar**Figure 3:** Upper left central incisor showing periapical radiolucency

Periapical X-ray of the right and left premolars; mandible and maxilla (Fig 1 and Fig 2) were requested in addition to the X-ray of the offending teeth (Fig 3). The X-rays of the impacted teeth revealed supplemental premolar bilaterally impacting on the roots of the first premolar, resulting in distal inclination of these teeth. The X-ray of the upper left central incisor, on the other hand, revealed periapical radiolucency. A diagnosis of dentoalveolar abscess in relation to upper left central incisor was made. An impression of bilaterally impacted supplemental premolar was also included as an incidental finding. Root canal treatment was planned for upper left central incisor while the impacted teeth were scheduled for surgical extraction to prevent further distortion of the occlusion. The patient and the accompanying parent were informed and educated on the implications of the presence of the impacted teeth. Extraction was suggested and agreed upon but had to be delayed on financial ground.

## DISCUSSION

Supplemental teeth are uncommon<sup>2</sup> developmental anomaly and its discovery in clinical practice has been described as interesting.<sup>3</sup> The prevalence of

supernumerary teeth varies between 0.1 and 3.6%.<sup>3</sup> They are less common in deciduous dentition where an incidence of 0.3% to 1.7% was reported. The relative frequency of different supernumerary teeth in decreasing order as presented by Luten is: upper lateral incisors (50%), mesiodens (36%), upper central incisors (11%) and bicuspid (3%). The aetiology of supernumerary teeth is not known but the theories<sup>9</sup> that have been put forward are: dichotomy of tooth bud and hyperactivity theory which suggests that supernumerary teeth are formed as a result of local, independent, conditioned hyperactivity of the dental lamina.<sup>9</sup> However, heredity has also been implicated in the occurrence of this anomaly.<sup>9</sup> Sexual dimorphism is reported by most authors<sup>10,11</sup> with males being more commonly affected in ratio 2:1.<sup>9</sup> However, cases involving deciduous supernumeraries were found not to exhibit variation in sex distribution.<sup>10</sup>

Patients may be aware of the presence of supernumerary teeth only when there is pathology around them or when the dento facial aesthetics is compromised. In the current report, the patient was not aware of the presence of the supernumerary probably because there were no symptoms. A careful clinical examination however shows that the first premolars were being displaced, due to pressure effect from the impacted teeth. Earlier literature indicates that supernumerary teeth may cause failure of eruption or displacement of adjacent teeth.<sup>9</sup> It is also known that erupted supplemental teeth most often cause crowding<sup>9</sup> while an unerupted supernumerary tooth could transform into a Dentigerus cyst.<sup>3</sup> Primosch<sup>12</sup> reported an enlarged follicular sac in 30% of cases, but histological evidence of cyst formation was found in only 4% to 9% of cases. In addition, supernumerary teeth may compromise secondary alveolar bone grafting in patients with cleft lip and palate and the presence of an unerupted supernumerary in a potential implant site may compromise implant placement.<sup>9</sup> They may also fuse with the normal adjacent teeth resulting in unaesthetic appearance of the affected teeth. External root resorption of the adjacent teeth due to pressure from erupting supernumerary teeth has also been reported.<sup>3,13</sup>

If there is no urgent intervention in the current case being reported, resorption may occur in due course. The radiographic examination of the supplemental teeth presented in this paper revealed obvious distal inclination of the lower first premolars due to pressure effect from the impacting supplemental premolars. Treatment of this type of condition depends on the type and position of the supernumerary tooth and on its effect or potential effect on adjacent teeth.<sup>9</sup> It is our plan to surgically extract the

impacted teeth presented in this report as soon as the patient can afford the treatment. When active treatment is not indicated, particularly if the teeth are impacted, the need for regular follow up and patient education can not be overemphasized. Pathology<sup>9</sup> from impacted teeth and or its spontaneous eruption causing a previously stable denture to begin to hurt has been described.<sup>14</sup> The impacted teeth presented in this report would perhaps have been mistaken for mandibular tori, had there not been the impacted teeth. Full mouth radiograph is not routinely requested for in our environment because of financial constraints on the part of the patients. Orthopantomograph (machine for full mouth radiograph) is also not available in most dental centres in Nigeria. In addition, the contour of the impacted teeth could not be palpated as it was covered by a dense bulbous lingual cortical bone plate. The distal inclination of the lower first premolars was also not marked enough to immediately suspect pressure effect from impacted teeth. On these grounds, the present case report would have been mistaken for tori mandibularis.

Torus mandibularis is an exostosis which appears on the medial side of the body of the mandible.<sup>2</sup> It is usually present near the premolars and above the location of the mylohyoid muscle's attachment to the mandible.<sup>15</sup> In 90% of cases, there is a torus on both the left and right sides making this finding an overwhelmingly bilateral condition.

The prevalence of mandibular tori ranges from 5-40% and are less common than torus palatinus- bony growths occurring in the palate.<sup>15</sup> They are slightly more common in males.<sup>15</sup> It is believed that mandibular tori are the result of both local stretches and genetic influences.<sup>15</sup> They are more common in adult life and are associated with bruxism.<sup>14</sup> Many preventable and or early oral lesions not related to a patient's presenting complaint could be nipped in the bud if full mouth radiograph are taken at first consultation. In the absence of facility for full mouth radiograph, it is suggested that occlusal X-ray may be considered. It is cheaper and besides it has a limited radiographic exposure when compared with full mouth periapical X-ray. It is strongly suggested that initial dental consultation should be regarded as incomplete if full mouth radiograph is not requested. A dentist may also be encouraged to do auto-transplantation of an extracted tooth if he is aware that a supplemental tooth is available nearby. This feat has been recorded in the literature.<sup>16</sup>

**CONCLUSION:** The current case report is an addition to the scanty literature on supplemental teeth. A full mouth clinical and radiological examination of every patient presenting at the dental clinic for the first time should aid in early diagnosis, prevention/and or treatment of conditions that could jeopardize occlusion and oral health in general.

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