Unusual supernumerary teeth

This case report describes the presence of 14 supernumerary teeth. Unique factors include symmetrical involvement in the canine and premolar regions of all four quadrants. The appropriate plan of treatment is left up to the reader.

—Editor

By Lisa L.Y. So, BDS, MDS

Supernumerary teeth are described as the teeth formed in excess of the normal dental formula.[1] In the general Caucasian population, the prevalence of supernumerary teeth is between 1% and 3%;[2,3] of these, 90% to 98% occur in the maxilla with a particular predilection for the premaxilla.[4] Males are affected approximately twice as frequently as females in the permanent dentition.[5-12] There seems to be a racial variation in the prevalence of supernumeraries, with a frequency higher than 3% in Mongoloid races.[3,13,14] A sex ratio as high as 5.5:1 favoring males has been reported on the maxillary anterior supernumeraries of Japanese school children.[15] Higher ratios of 5.5:1 and 6:5.1 for males have been reported for supernumerary teeth of Hong Kong school children.[14,16]

Single supernumerary teeth account for 76% to 86% of all cases; and supernumerary teeth occur in pairs in 12% to 23% of all cases; only in less than 1% of the supernumerary cases are three or more extra teeth found.[7,13,17,18] Although cases of multiple supernumeraries have been published,[19-22] they are rare.

Case report

A 15-year-old Southern Chinese boy was seen regarding a painful, carious mandibular left primary second molar. There was a history of no dental experience in the past. At the time of initial orthodontic evaluation the patient was in the permanent dentition stage of dental development with a retained carious mandibular left primary second molar. The maxillary central incisors were slightly disto-labially rotated. Spacings were present between the maxillary right first premolar and canine, the maxillary central incisors, the mandibular left first premolar and canine, the mandibular central incisors, and the mandibular right canine and first premolar. The erupted mandibular right second premolar was malformed and tuberculated; its antimere was clinically absent. A grossly carious but clinically firm mandibular left primary second molar was retained. Neither abnormal mandibular displacements nor frenular attachments were noted (Figures 1, A and B; 2, A through E). The occlusal development was categorized as a Class I malocclusion with reduced incisal overjet and overbite (Figure 3).

Figure 1A & 1B
Facial photographs.

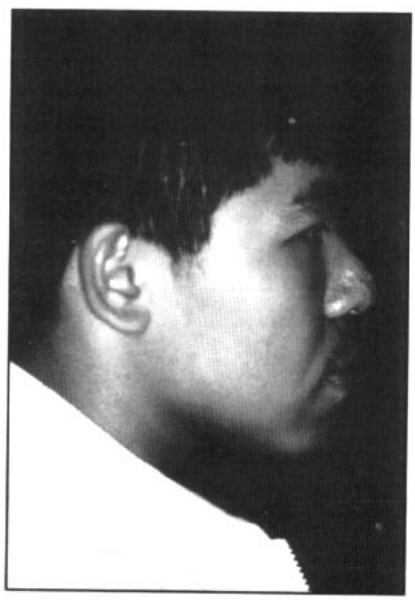

Figure 1A

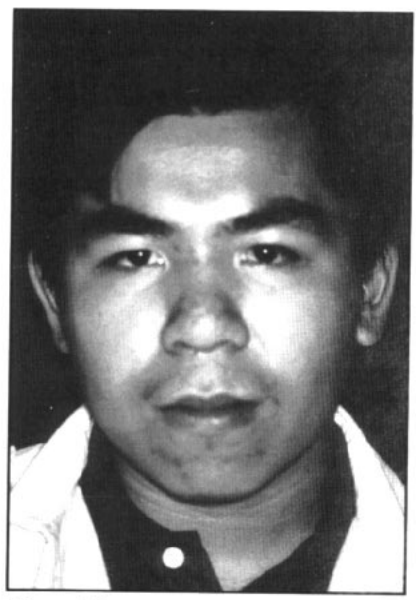

Figure 1B

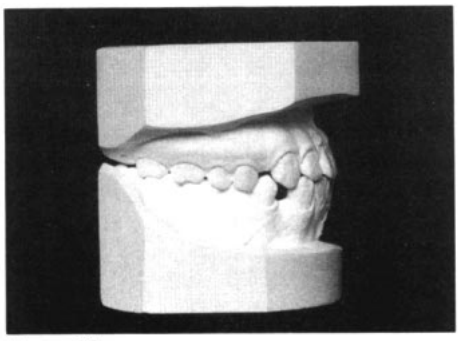

Figure 2A

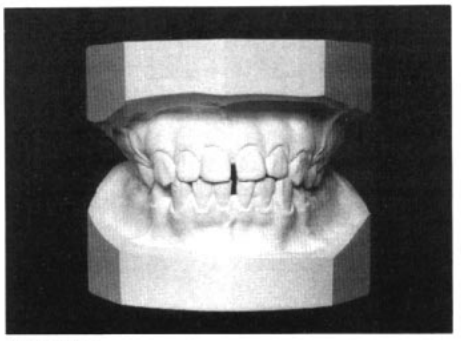

Figure 2B

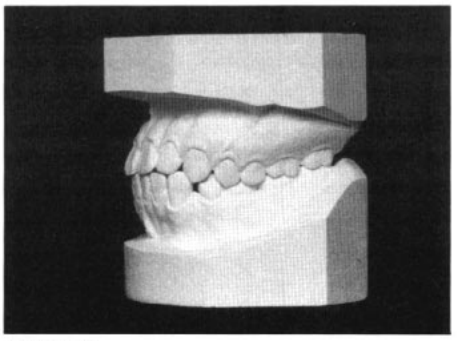

Figure 2C

Figure 2A through E
Photographs of study models showing the Class I malocclusion with reduced overjet and overbite, spacings and rotations.

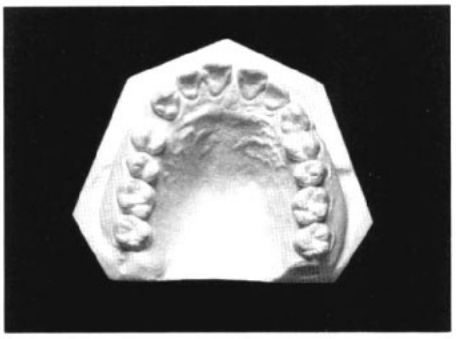

Figure 2D

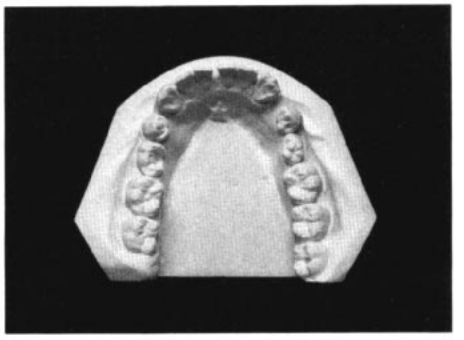

Figure 2E

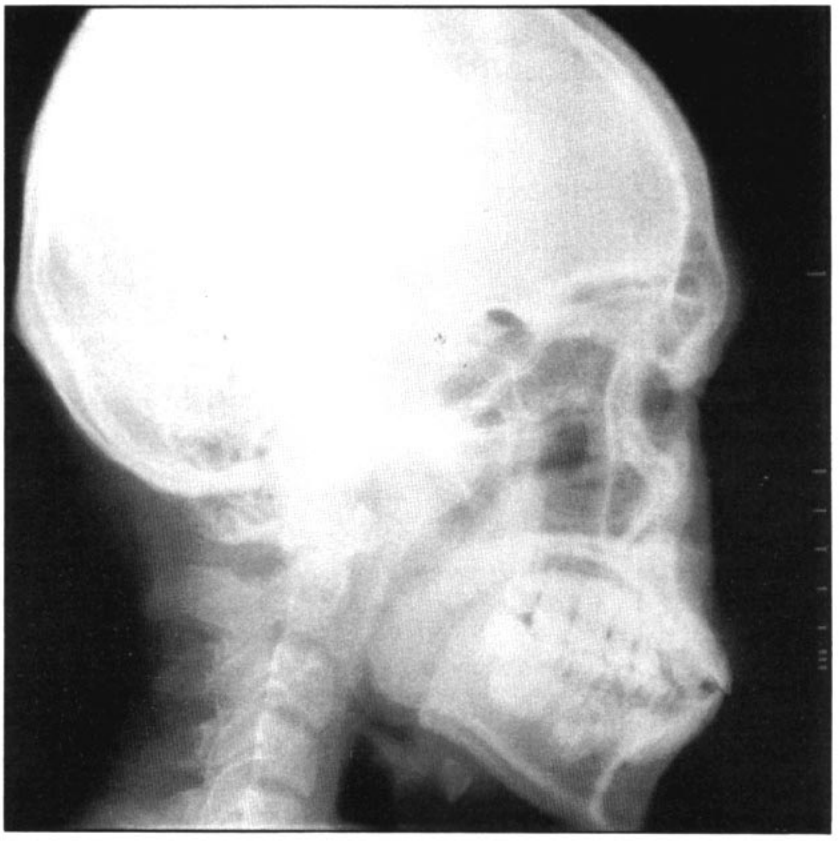

Figure 3
Cephalometric radiograph showing skeletal base pattern.

Radiographs disclosed 14 supernumerary teeth (Figures 4 and 5) with seven in the maxilla and seven in the mandible. Six of the maxillary supernumerary teeth, three on each side, were found bilaterally in the maxillary canine and premolar regions with a complex odontome between the right lateral incisor and canine. None of these were everted. Six of the seven mandibular supernumerary teeth morphologically resembled premolars. A radiopacity which had the density and morphology of an enamel cap of a premolar was found between the erupted mandibular right second premolar and first molar. Two of the mandibular supernumerary teeth were lying horizontally in very close association with the left inferior alveolar canal. The unerupted mandibular left second premolar was impacted disto-angularly with an enlarged pericoronal radiolucency. Its root development seemed to be active. A pattern of abnormal root resorption of the retained primary molar was obvious with more than two-thirds of the distal root only being resorbed. The carious lesion was very advanced with coronal pulpal involvement.

Discussion

Supernumerary teeth may occur as isolated dental findings or as part of a syndrome; cleidocranial dysostosis is a well-known example.[23,24] The etiology of supernumerary teeth as an isolated dental finding is essentially unknown; they are assumed to be polygenic in most instances.[25,26] A supernumerary tooth is suggested to be a result of dichotomy of a tooth bud.[27,28,29] If this is

Figure 4

the result of splitting of a single tooth bud, one would expect the developmental stage of the supernumerary teeth found in the mandible to be approximately the same as that of the erupted premolars; one would not expect the vertical orderly arrangement of the radiopaque enamel cap and supernumerary tooth or the different stages of dental development of the other supernumeraries compared to the erupted teeth.[22]

The presence of supernumerary teeth may lead to the development of dentigerous or primordial cysts, root resorption of adjacent teeth or inversion of the supernumerary into the nasal cavity.[30] None of these problems were associated with the unerupted teeth found in this case. It remains doubtful if their presence is related to the generalized spacing because there is no positive relationship between their presence and locations and the spacing conditions in the dental arches. The spacings between canines and first premolars on the right side of both the maxillary and mandibular arches may be related to their presence. However, their presence in other locations does not cause spacing of the erupted permanent teeth. In addition, the median diastemata in both the maxilla and the mandible are not due to the presence of any supernumerary such as the most commonly found mesioden.

The unique features in this case include the symmetrical involvement in the canine and premolar regions in all four quadrants; unusual excessive number and combinations of simple odontome; complex odontome and supernumerary teeth; doubtful relationship of spacing in the erupted dentition and positioning of supernumerary teeth; presence of odontoma, both simple and complex, in the maxilla only, while the mandible presents with supernumerary teeth resembling the premolars; none of the supernumerary teeth are situated in the maxillary anterior region although such supernumeraries are more common than any other.[5,6,10,31-35] All of the supernumerary teeth are unerupted, which generally agrees with the 75% unerruption and impaction rate of supernumeraries.[21]

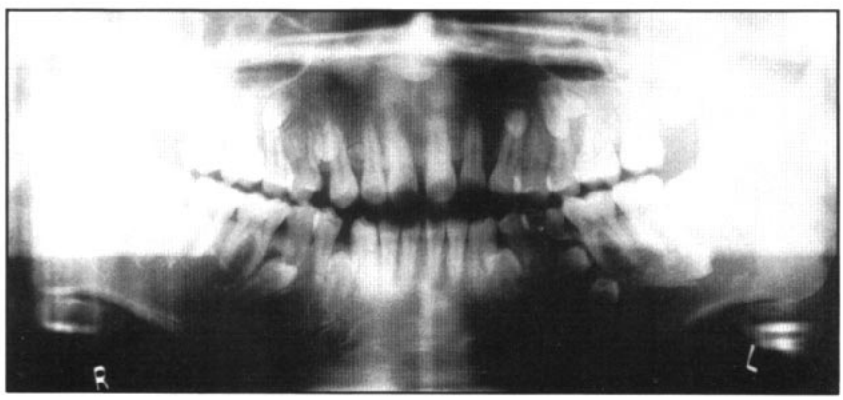

Figure 5

Figure 4
Intraoral radiographs of the supernumerary teeth.

Figure 5
Panoramic radiograph revealing a full complement of permanent dentition with a retained mandibular left primary second molar, seven maxillary and seven mandibular supernumerary teeth.

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