CASE REPORT

Non-syndromic multiple supernumerary teeth in permanent dentition: a rare phenomenon

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SUMMARY

Hyperdontia or supernumerary teeth in the absence of associated systemic condition or syndrome is an uncommon phenomenon. Non-syndromic supernumerary teeth need to have periodical radiographic observation. In the case of asymptomatic condition, as they impacted in the jaw, a careful examination is necessary because they may develop into pathological status such as dentigerous cysts. Surgical removal of such teeth is indicated if evidence of any pathologies, such as cystic lesion, resorption, delayed eruption, altered eruption and displacement of adjacent teeth, is evident or have occurred.

BACKGROUND

Supernumerary teeth, in any morphological form, are those that develop in addition to the normal complement and set of teeth. The reported incidence of supernumerary teeth ranges 0.3–1.7% of the population with greater frequency in Asians and Native Americans.¹ According to previous studies, supernumerary teeth more frequently found in permanent dentition with a male predilection. Supernumerary teeth can be classified by their location in the dental arch: mesiodens, paramolar and distomolar, while the most commonly affected region is the mandibular premolar region.^{2–3} Hyperdontia affecting the premolars can be single (76–86%), double (12–23%) or multiple (<1%).⁴

Multiple supernumerary teeth are more common when a syndrome is involved. Yusof² suggested that it may be rare to find multiple supernumerary teeth without an associated syndrome. Common syndromes showing multiple supernumerary teeth along with systemic conditions include Gardner's syndrome, cleidocranial dysostosis and cleft lip and palate. Acton⁵ advised checking for the evidence of syndrome involvement in all cases exhibiting multiple supernumerary teeth. A careful check for a family history of hyperdontia could point to the presence of a genetically determined syndrome.

This paper presents a case report of six supplemental supernumerary teeth in a non-syndromic adult male patient.

CASE PRESENTATION

A 20-year-old male, reported to the OPD, department of conservative and endodontic, with pain and food impaction in upper right posterior region. The pain was of acute onset and intermittent in nature which aggravated on chewing and was relieved on taking analgesic. He also had a problem

of food impaction because of malaligned and decayed teeth in the same region. Intraoral examination of the maxillary arch revealed carious broken upper right maxillary molar teeth. Further bilateral supernumerary paramolars erupted buccal to second maxillary molars and bilateral extra premolars erupted palatal to first and second maxillary premolars were noted (figure 1). The supernumerary premolar on the left side in maxillary arch was partially erupted, while its contralateral was fully erupted. On radiographic examination in orthopantomogram (OPG) view, two supernumerary teeth impacted in mandibular arch distal to second premolars were also observed. Thus, a total of 38 teeth were present in the full mouth radiographically, four supernumerary teeth in the maxillary arch and two supernumerary teeth in the mandibular arch were present, which is very rare in the Indian population.

The medical history shown was insignificant, and no related syndrome with normal mental status was observed. The family history of father, mother, sister and brother did not reveal any history of malocclusion/hyperdontia or any syndromic illness. Based on clinical features and radiographic findings, the diagnosis of chronic apical periodontitis of right maxillary first molar and multiple supernumerary teeth was made. The patient was prescribed analgesics for pain relief and meticulous oral hygiene in supernumerary teeth was advised to prevent food impaction.

INVESTIGATIONS

The radiological investigation included an orthopantomogram (OPG) and maxillary/mandibular occlusal views depicting the supernumerary teeth.

Figure 1 Clinical photograph of maxillary arch showing four supernumerary teeth.

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Figure 2 Orthopantomogram view showing two extra premolars in maxillary arch and two impacted extra premolars in mandibular arch.

DIFFERENTIAL DIAGNOSIS

Single distomolar, non-syndromic single paramolar, Gardner's syndrome, Fabry-Anderson syndrome, Ehler-Danlos syndrome, facial fissures or cleidocranial dysplasia.

TREATMENT

Treatment plan includes the endodontic treatment of right maxillary first molar and the extraction of supernumerary paramolars and premolars of maxillary arch on same side was suggested. The patient was also referred to the orthodontic department for the possibility of correction of occlusion and space maintenance.

OUTCOME AND FOLLOW-UP

Endodontic treatment and restorative rehabilitation of the involved tooth along with extraction of associated supernumerary tooth provided relief from pain as well as food impaction. The follow-up was done for 1 year to evaluate for further eruption of supernumerary. Supernumerary did not show further eruption in any arch.

DISCUSSION

The present case confirms multiple supernumerary teeth without any syndrome or any systemic condition. The exact aetiology of supernumerary teeth is still obscure although many theories have been proposed. The dichotomy theory of tooth germs states that the tooth bud splits into two equal or different sized parts, resulting in two teeth of equal size or one normal and one dismorphic tooth, respectively. This hypothesis is

Figure 3 Occlusal view showing four supernumerary teeth in maxillary arch.

supported by animal experiments in which the split germs have been cultivated in vitro.^{6,7}

Hyperdontia is considered to be multiple when there are one or more supernumerary teeth in two or more dental groups. Such hyperdontia is often associated with Gardner's syndrome, Fabry-Anderson syndrome, Ehler-Danlos syndrome, facial fissures or cleidocranial dysplasia.⁸ The patient in the present case did not feature any mental retardation, abnormal facial appearance and no skeletal or other abnormalities suggestive of a systemic syndrome. Batra *et al*⁹ described a case of non-syndromic multiple supernumerary teeth, which suggests that there was an autosomal dominant pattern of inheritance.

Supernumerary teeth may erupt or remain impacted within the jaw. Approximately 75% of all supernumerary teeth are impacted and are asymptomatic. Multiple supernumerary teeth rarely occur without being associated with syndromes. The diagnosis is usually made as a result of a casual finding during routine panoramic x-ray studies.¹⁰ The clinical situations that may indicate the presence of supernumerary teeth are the absence of permanent teeth in arch,¹¹ agenesis,¹² malposition of the erupted permanent teeth,¹³ malocclusion,¹⁴ wide interincisive diastema¹⁵ and positive familial anamnesis,¹⁶ resorption of roots of the adjacent teeth¹⁷ with loss of their vitality, tumefaction on the vestibular or palatine/lingual area.

On the basis of clinical situation and radiographic evidence, patient diagnosis and treatment planning can be formulated. No ideal or definite treatment can be planned in all situations of multiple supernumerary teeth. Optimal treatment can be planned for the delayed eruption of normal dentition due to supernumerary involvement. The options include the removal of the supernumerary and orthodontic treatment to re-establish sufficient space, with or without surgical exposure of the unerupted tooth at the time of supernumerary tooth removal. In this case report, the patient was satisfied after endodontic treatment and extraction of few supernumerary teeth solved the problem of food impaction due to crowding in a quadrant. Further presence of supernumerary teeth also causes psychological trauma in the form of traumatic and surgical extraction to the patients once explored or diagnosed in oral cavity.

Learning points

- ▶ Multiple supernumerary teeth in permanent dentition is a rare occurrence.
- ▶ A detailed evaluation, clinically and radiographically, is needed for the evaluation of extra supernumerary teeth.
- ▶ Long-term follow-up is must to check further eruption of all supernumerary teeth.

Competing interests None.

Patient consent Obtained.

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