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Post Extraction Pain Management Of "Adhidanta"- The Twin Mediodens By Ayurvedic Intervention- A Rare Case Report

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Abstract

A supernumerary tooth is an additional entity to the normal series and is seen in all the quadrants of the jaw. Supernumerary teeth can present in various forms and in any region of the mandible or maxilla, but have a predisposition for the anterior maxilla and its prevalence is about 0.3 to 3.8%. It is a developmental anomaly and has been argued to arise from multiple aetiologies. The presence of supernumerary teeth may give rise to both esthetic and pathologic problems if not managed in early time. Eruption of Supernumerary teeth in the maxillary midline are common. These may occur in primary and permanent dentition, whereas in opd it is observed that situation of the teeth is at the anterior maxillary region which is a rare condition. According to Ayurveda Supernumerary tooth can be compared with *Adhidanta* characterized by eruption of additional tooth in the vicinity of a tooth as described by different *Acharya*. This report presents a case of a 11-year old boy with twin supernumerary tooth in the maxillary anterior region. The supernumerary tooth were surgically extracted and Ayurvedic treatment was administered for postoperative pain management.

Keywords: *Adhidanta; Danta nishkasana*; Supernumerary Teeth; Mesiodens.

Introduction:

Supernumerary tooth may be defined as developmental alterations of number and morphology that result in the formation of teeth in excess of the usual number[1]. They may be unilateral or bilateral and single or multiple, occur in any part of the tooth bearing areas in both dental arches, and may occur in primary and permanent dentition[2]. A supernumerary tooth in the maxillary anterior incisor region is termed as mesiodens[3]. It has been found that approximately 25% of the permanent supernumerary teeth are erupted and the remainder are unerupted, whereas 73% of the primary supernumerary teeth are erupted. Supernumerary teeth have a reported incidence in the permanent dentition of 1.5-3.5% and a male to female ratio of approximately 2:1, with 98% presenting in the

maxilla and, of these, 75% within the maxillary midline[4]. In the primary dentition, the incidence is said to be 0.3%-0.8% and in the permanent dentition 1.5%-3.5%[5]. Approximately 76% to 86% of cases represent single-tooth hyperdontia, with two supernumerary teeth noted in 12% to 23%, and three or more extra teeth noted in less than 1% of cases[6]. The conditions commonly associated with an increased prevalence of supernumerary teeth include cleft lip and palate, cleidocranial dysplasia, and Gardner syndrome. Supernumerary teeth associated with cleft lip and palate result from fragmentation of the dental lamina during cleft formation[7]. A combination of environmental and genetic factors has been proposed to explain Supernumerary tooth occurrence[8]. Localization of ST plays a major role in diagnosis and treatment, especially if surgical intervention is needed[9]. However, Supernumerary tooth classified based on morphology (conical, tuberculate, supplemental, and odontomes), location (mesiodens, paramolar, distomolar, and parapremolar), position (buccal, palatal, and transverse), orientation (vertical or normal, inverted, transverse, or horizontal)[10].

Adhidanta is the one among the *Dantagata rogas described by Acharya Vagabhatta[11] where as Danta moola gata roga as described by Acharya Sushruta[12], Bhava Prakasha[13] and Yoga Ratnakara[14] Acharya Sushruta* has termed *Adhidanta* as '*Vardhana'*. However, *Bhava Prakasha and Yoga Ratnakara* has termed it as *Khallivardhana*, which is characterized by eruption of additional tooth just in the vicinity of a tooth.

As far as the management is concerned, *Acharya Vagbhatta* has recommended coating of *kshara* (caustic alkali), when it becomes loose, it should be pulled out like pulling out a *krimidanta* and treated in the same way. If the bleeding does not stop, it (the site) should treated by *agnikarma* (~thermal cautery) and then treated as an ulcer[15].

Acharya Sushruta[16], *Bhava Prakasha*[17] and *Yogaratnakara*[18] have recommended that *Adhidanta* should be extracted and *agnikarma* should be done, the procedures mentioned for *krimidanta* (worm-eaten tooth) should then be adopted by the learned surgeon.

This article will present the surgical management of palatally placed twin supernumerary teeth.

Case report:

A 11-year-old boy reported to the dental OPD. All India Institute of Ayurveda, Saritha Vihar, Delhi with a chief complaint of eruption of two new teeth in the upper anterior region of jaw which he has noticed for last 2 months. The patient did not present with any previous chronic illness, bleeding disorder, surgical history and drug allergy. Family & medication was also not found.

In *Ashtavidha pariksha* (Eight fold examination) it was found that his *Nadi* (~pulse) was normal, *Mutra* (~Urine) was normal with a frequency of 4-5 times a day. Bowel history revealed the frequency of twice a day, *Mala* (~bowel) was *Sama*, *Jihwa* (~tongue) was clear. He had *Anushna sparsha* (~touch was not too hot) and normal *Shabda* (~voice). His *Drishti* (~vision) was not affected and his *akriti* (~body built) was *madhyama*.

On vital examination pulse rate was 78/min and regular, blood pressure was 112/86 mm Hg, temperature was 97.6°F, and respiratory rate was 18/min.

Oral clinical examination of lips and labial mucosa, buccal mucosa, mucobuccal fold, gingiva, hard palate, soft palate, uvula, tongue and floor of mouth revealed normal structures. On dental examination it was noted that twin mesiodens were present palatally in the anterior maxillary region (Fig.A).

Investigations:

Routine blood investigations e.g., Hb%, TLC, DLC , ESR, platelets count, BT (bleeding time), CT (clotting time) and RTPCR for Covid 19 test was done before examination. An orthopantomogram (OPG) was done to see the status of erupted teeth and extent of the teeth.

OPG revealed palatally placed twin mesiodens with conical crown and straight root [Fig. B].

Treatment:

Considering the history, clinical examination, and investigations, surgical removal of the mesiodens was planned. Treatment procedure was initiated by administering local anaesthesia (Lignocaine Hydrochloride 24.64 mg, 2% A, with Adrenaline 1:180000) in the palatal area. The supernumerary tooth located palatally were removed after attaining anaesthesia of the palatal area (Fig.C). The extraction socket was inspected for any pathology. Both extracted supernumerary teeth were conical in shape with straight root (Fig.D). Patient was given Ayurvedic treatment i.e., Kaishore guggulu 500 mg twice daily and Amritarishra 10 ml twice daily (with equal quantity of water) for 7 days after food. The patient was recalled after 15 days for review examination and the extracted socket was found almost healed(Fig. E).

Discussion:

Supernumerary teeth can affect the normal position and eruption of adjacent teeth and often require clinical intervention. It is essential not only to enumerate but also to identify the supernumerary teeth present clinically and radiographically before a definitive diagnosis and treatment plan can be formulated[19].

Most of the time, Supernumerary teeth are asymptomatic and may be within the jaws and are diagnosed by chance when radiographs are taken for other purpuses. Though they may remain within the jaws for years without pathological manifestation. These include failure of a tooth to erupt, delayed eruption of permanent teeth, ectopic eruption, diastema, rotation of adjacent teeth, displacement of teeth and crowding. Others problems include periodontitis, dilacerations, dentigerous cyst formation, root resorption of adjacent teeth, occlusive disturbance and unaesthetic appearance[20] which are altogether absent in our case. Hence it need the proper management at early stages.

It is difficult to formulate an ideal treatment with Supernumerary teeth. It may vary from just extraction of Supernumerary teeth to extraction followed by orthodontic correction to establish a good occlusion [21.]

If teeth are causing no complications and are not likely to interfere with orthodontic tooth movement (i.e if they lie beyond the dental apices) they can be monitored with yearly radiographic review. The patient should be warned of complications, such as cystic change and migration with damage to nearby roots. If the patient does not wish to risk such complications, it is acceptable to remove supernumerary teeth. If they are associated with the roots of permanent teeth, it may be sensible to await full root development before surgical extraction to minimize the chances of root damage.

Adhidanta is one amongst the *Asthi Pradoshaja Vikaras.* When the *Asthi* gets vitiated extremely by the *Vata Dosha* along with other *Doshas* and changes its natural form, leads to a specific condition known as *Asthi Pradoshaja Vikaras* .The eruption of Adhidanta at various sites in the body differ according to *Sthana Dusti* or *Khavaigunya* and it depends upon the specific *nidana* like *Ativyayama* (~excessive *Shareera Ayasajanaka Karma*), *Atisankshobha* (~excessive *Manasika Kshobha* i.e., mental stress or disturbance), *Ativighattana* (~excessive movements or separation or injury) and *Vatali Ahara- Vihara* by the persons when they exposed to these for longer duration[22].

In the present case after extraction of mesiodens (Adhidanta) Kaishore guggulu and Amritarishra given for orally for 7 days. As far as the mode of action of Ayurveda drugs are concerned Kaishora Guggulu having ingredients like Triphala, Amruta, Guggulu, etc having vatashamaka, analgesic, anti- inflammatory, anti-bacterial properties which may help to relieve the postoperative pain and promote the process of healing. On the other side Amritarishta having ingredients like Amrita, Dashmoola etc having vatashamaka, shothahara, antioxidant and immunity boosting properties which may responsible for over improvement of oral health.

Conclusion:

Supernumerary teeth often hinder the eruption and development of the related permanent tooth causing localized periodontal problems. Supernumeraries are relatively common but supernumerary tooth in the anterior maxillary region are rare variety and can cause various complications which range from crowding to cyst formation if not managed in early stage. Males are predominantly affected by ST, which is common in permanent dentition. The greatest prevalence of it was found in the maxillary anterior region as compared to the maxillary posterior region. Many factors must be considered when evaluating supernumerary teeth. Specifically, the demographic profiles of patients with supernumerary teeth provide useful epidemiological information. The clinician should recognize signs suggesting the presence of supernumerary teeth, particularly aberrations in the eruptive pattern, and the relevant investigations and management can be done accordingly. It is important the follow up of the patient during orthodontic treatment and professional oral hygiene sessions, periodic checks, and motivational reinforcement must be performed. In Ayurveda such abnormal eruptions of tooth can be compared to *Adhidanta* and managed by extraction along with oral Ayurvedic medication accordingly.

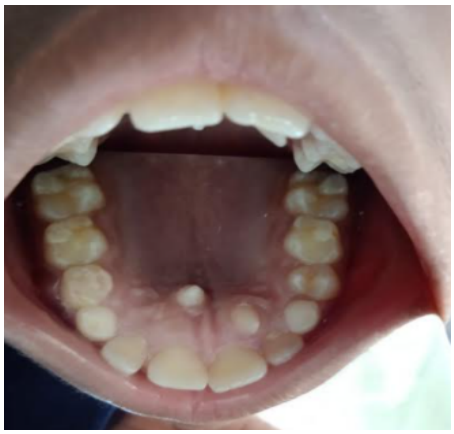

Fig. A (Mirror image of anterior maxilla representing palatally present twin mesiodens)

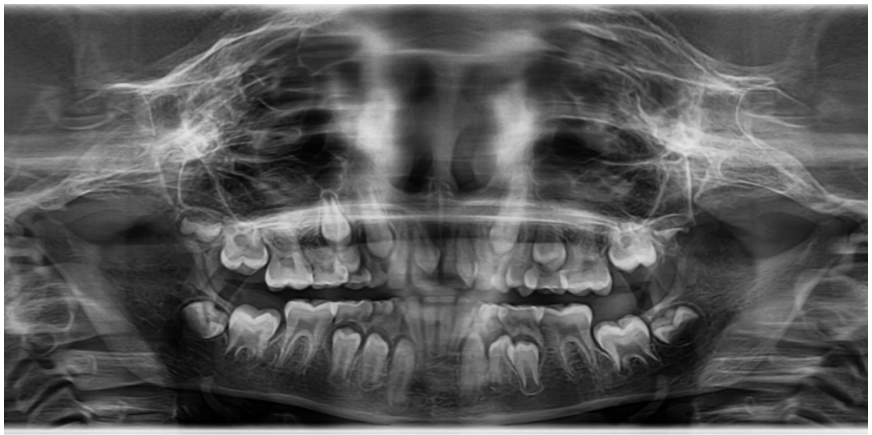

Fig. B (Radiographic {OPG} view of anterior maxilla)

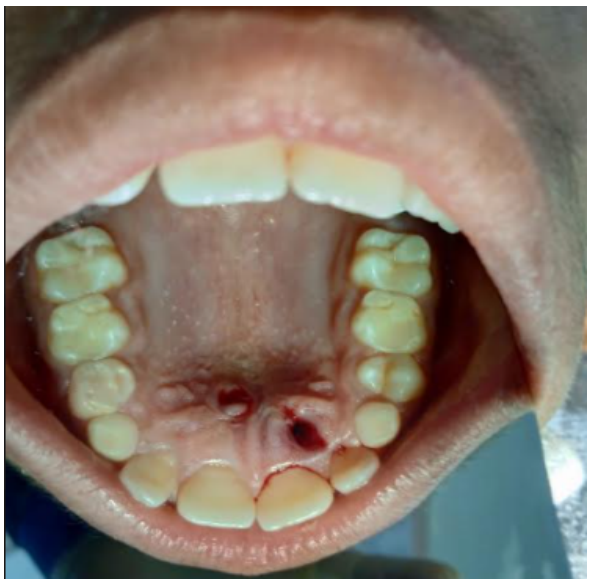

Fig. C (view of anterior maxilla after surgical extraction of mesiodens)

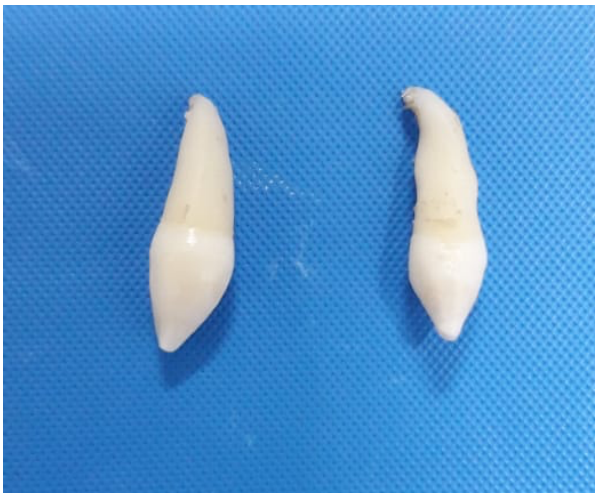

Fig. D (twin mesiodens with conical crown and straight root)

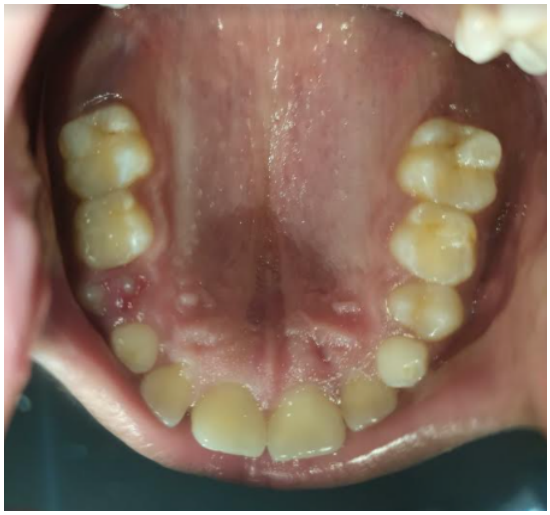

Fig. E (Picture of anterior maxilla after 15 days of extraction of mesiodens)

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