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Orthodontic-surgical treatment of retained tooth 47

The term "retained teeth" designates teeth that have not erupted in the proper time for them and despite the completed root development they remain in the bone or in the soft tissues of oral cavity. The statistic studies reveal that most frequently retained teeth are third lower molar teeth, cuspid teeth in the jaw and the second premolars in the mandible (7, 8). In the milk dentition the phenomenon of tooth retention occurs much less frequently than in the case of permanent teeth. Among the most frequent causes of teeth retention, there is a disproportion between the number and size of teeth and the length of the alveolar process in the jaw or mandible. Sometimes a local reason can be persistence of a milk tooth with delayed root resorption or incorrect position of a permanent tooth bud. It is thought that also traumatic and hereditary factors play a significant role in the etiopathogenesis of teeth retention, as well as A and D vitamin insufficiencies and hormonal disorders. The tooth eruption process may be disturbed by such pathological states as: cysts, supernumerary teeth, calluses, atypical structure of a tooth, ankylosis, injuries, neoplastic tumors, post-fission malformations, past inflammatory states of bones (3, 6).

The retained teeth may remain in the bone for many years without giving any symptoms. Often only an accidentally taken x-ray picture shows a retained tooth. Frequently, in a clinical examination, we find the presence of a persistent milk tooth or (and) a projection on the alveolar process. The selection of treatment method depends on local conditions in the oral cavity, the patient's age and health state. Sometimes, at unfavourable, deep position of a retained tooth and lack of ailments, such a tooth is retained for periodical check-ups. When there is no bud of a permanent tooth and appropriate space in the dental arch, an advisable method of conduct is auto-transplantation of a retained tooth. The principle of planned treatment is to save teeth of functional value and those that decide about the patient's esthetic looks. In the surgical-orthodontic treatment, aimed at bringing a retained tooth onto its proper place in the dental arch, the most frequently performed procedures are: gingivectomy, apical flap shift, closed flap method or taking off the bone lamella above the crown of the retained tooth (1, 5, 10). The first two methods are usually applied in the case of retained front teeth, situated labially, with incisive margin situated below the mucogingival border. The closed flap method involves resuturing the previously detached mucoperiosteal flap, having removed the bone lamella above the tooth crown and fixing the retention element to an elastic traction. This method is advisable first of all in the case of deeper retained teeth or with the incisive margin situated below the mucogingival border. The last method is only related to taking off the bone lamella above the crown of a retained tooth without assembling retention elements and suturing up the flap. This action is aimed at stimulating the retained tooth to erupt before orthodontic treatment and is usually applied in palatal position of the tooth (1, 2).

CASE DESCRIPTION

The patient, D.M., aged 24 years, was referred to the surgery to have the retained tooth 47 extracted. During clinical examination and analysis of the pantomogram it was found that tooth 47, situated horizontally, is retained, with erupted neighbouring teeth 46 and 48. Tooth 46 was erupted in the correct position, whereas tooth 48 was erupted in the region of mandibular angle, strongly mesially tilted towards tooth 46. The procedure of extracting the retained tooth 47 was related to a large, postoperative bone defect with root denudation in the mesial tooth 48 and distal tooth 46. There was a high risk of losing teeth 46 and 48 in the near future. On consulting a physician-orthodontist, a decision was taken to extract tooth 48 and to make an attempt at placing the horizontally situated tooth 47 in erect position.



Fig. 1. Retained tooth 47 in patient D.M., aged 24 years



Fig. 2. Status after uncovering tooth 47 and affixing 2 orthodontic locks

During the surgical procedure tooth 48 was extracted in anesthesia with Citocartin 100 and after angular incision and detaching the mucoperiosteal flap the crown of tooth 47 was uncovered. Two orthodontic locks with wire loops for elastic tractions were attached to the buccal and distal

surfaces. The procedure was ended with suturing the flap. The patient was informed about the possibility of complications that might occur in relation to the pressure of erected tooth onto the vasoneural bundle.

At present, after nearly half a year of treatment with a permanent orthodontic device, tooth 47 is erected without complications. The retained tooth gradually succumbs to the process of traction and the correct bone reconstruction, both in the region of the distal root of tooth 46 and in the place of post-extraction bone defect. The patient remains under care of a physician-orthodontist and turns up for appointed check-up visits.



Fig. 3. Control film (radiogram) after ca. half a year's treatment

DISCUSSION

The retained second lower molar teeth occur very rarely, in less than 1% of patients. There are different theories on reasons for retention of these teeth. Often as a cause of retention the incorrect position of third molar tooth is indicated (2, 5). Another reason may be irregular development of the second molar teeth roots. Earlier development of the distal root may cause mesial tilt of the tooth. Iatrogenic action is also reported as a cause of this status. At an attempt of longitudinal extension of mandibular arch by orthodontic treatment, shifting the first molar tooth distally may result in retention of the second molar tooth eruption. Orthodontic-surgical treatment involves introducing the retained tooth into the dental arch. Sometimes (when the tooth is damaged by caries, or incorrectly positioned), extraction of the second molar tooth with subsequent introduction of the third molar tooth into the arch is recommended (5, 9). Each case must be considered individually, interdisciplinarily, optimally in a given local situation.

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SUMMARY

The authors described a case of team treatment of the retained tooth 47, placed horizontally in the lower jawbone in a 24-year-old patient. After an orthodontic consultation it was decided to extract the erupted tooth 48 and to insert the retained tooth 47 into the arch orthodontically.

Leczenie ortodontyczno-chirurgiczne zatrzymanego zęba 47

Autorzy opisali przypadek leczenia zespołowego położonego poziomo w kości żuchwy zatrzymanego zęba 47 u 24-letniego pacjenta. Po konsultacji ortodontycznej podjęto decyzję usunięcia wyrzniętego zęba 48 i ortodontycznego wprowadzenia do łuku zatrzymanego zęba 47.