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Prosthetic rehabilitation of edentulous patients with cleft palate

Frequency of incidence of primary and secondary cleft palate is determined by domestic and foreign authors as 0.5%–1.6% of the whole population, which means that these are most often occurring developmental abnormalities of face and mouth (1). Among causes of cleft palate are endogenous factors (genetic) and exogenous factors (mother hormonal disturbances, viral and protozoan illnesses, miscarriages, physical and mental traumas, bad social conditions, the aged parents), the unfavourable influence of which during the developmental stage of the embryo can cause disclosure of developmental abnormality (3). The degree of intensification of deformation and range of mouth loss can be different determining the range of associated highly specialized team surgical-orthodontic-prosthetic treatment. At this time cleft palate diagnostic system and applied therapeutic methods allow to get very good therapeutic effects. Early started proper orthodontic-surgical therapy (lamina palate for infants, operation of lip fissure in the sixth month of life and cleft palate in the third year of life, later speech and orthodontic therapy) enable almost correct function of masticatory organ. Plastic corrections of nose, lip and mouth tissues often make final prosthetic treatment to rebuilding dental arcs (3, 4).

We must remember about a group of patients in their fifties, sixties, seventies who were not treated by modern treatment techniques of cleft palate or patients, in whom after many correction operations on muco-osseus surface often residual holes are left, which join mouth with fauces. And in consequence dysfunction of mastification, speech, swallowing, breathing and hearing appears. They often exist with postoperative scars of soft tissues, increased tension of orbicular face muscle, movable incisoral process, low attachment of upper lip and its shortage, abnormal look of lip, abnormalities of occlusion (2, 5).

In this work, the process of prosthetic rehabilitation of adult edentate patient after unilateral cleft palate primary and secondary with the hole joining mouth with nasal cavity was shown. Nowadays it is a very rare case. Authors will describe in a very simple and concise way clinical and lab stages of making obturator of prosthetic restoration. We must remember that in cases of cleft there often exist disproportions between the sizes of the upper and lower jaw caused by hypogenesis of the upper jaw bone. Getting a satisfactory aesthetic effect and glossing over size disproportions requires using of extended prosthetic restoration structure. It increases the weight of prosthetic restoration which makes difficult to get satisfactory fixing and stabilization. In case of toothlessness the main fixing element is tight obturator using edges of palate loss. The weight of prosthetic restoration and functional shaping of obturator influence in a significant way a prosthetic rehabilitation success.

CASE DESCRIPTION

Patient T. E., age 56, came to the Department of Prosthetic Dentistry, Medical University of Lublin to make new upper prosthetic restoration with obturator closing hard palate loss which joined

mouth with nasal cavity and lower prosthetic restoration. Diagnosis: state after unilateral lower and upper cleft palate, hypoplasia of the upper jaw, toothlessness, loss of hard palate and alveolar process in the region of upper left canine tooth. Prosthetic restoration which was used until now was characterized by lack of stabilization and retention on surface, which was caused by changes within prosthetic surface. During dental examination scar in under nasal region, shortening and sinking-in of upper lip, toothless alveolar process of lower and upper jaws, loss of hard palate tissues, disproportion in the sizes of lower and upper jaw caused by hypoplasia of the upper jaw was observed. The patient notified difficulties in speech. Prosthetic restoration which weighed 29.5 g descended because of gravity and was making impossible the proper function of mastication and speech, which caused lisping and characteristic clattering during the contact with lower prosthetic restoration. Obturator was an insufficient barrier for liquids consumed by patient, making possible liquids penetration to nasal cavity.



Fig. 1. Intraoral situation. Connection between mouth and nasal cavity through cleft palate



Fig. 2. Air chambers reducing entire weight of prosthetic restoration with obturator

Upper prosthetic restoration with obturator and lower prosthetic restoration was made in proper occlusion height. Anatomical impressions of the upper and lower jaw were taken by alginate mass; before this the postfissural foramen was protected by aseptic gauze swab. Then all essential procedures to make prosthetic restoration were performed. Lower jaw hypoplasia caused by congenital deficiency

of hard and soft tissues in the fissure region, which required significant thickening of denture base in order to eliminate the existing image of pseudomesiocclusion. The weight of prosthetic restoration was too big, because of a large amount of acrylic material in obturator part. In order to improve stabilization and retention of prosthetic restoration, its weight was diminished. Part of acrylic was removed by fraise from obturator inside and thick vestibular plate, by making foramens from the side of mouth, taking note of not weakening durability of prosthetic restoration. The weight of prosthetic restoration was diminished and reached 19 g.



Fig. 3. New prosthetic restorations: complete upper prosthesis with obturator and complete lower prosthesis



Fig. 4. Final treatment effect

After making little correction during control visit the patient did not suffer from any pain. Significant improvement in speech, better consuming of food were observed as well as significant improvement in patient esthetics and well-being. Because of lack of pain ailment, tightness and good adaptation authors did not decide to make rebasing by elastic acrylic mass of upper prosthetic restoration obturator.

CONCLUSIONS

Successful treatment of cleft palate consists of a range of muco-osseous surface malformation, patient's attitude, involving a dentist. Despite the significant degree impairment of mastication organ in some cases it is possible to get satisfactory treatment results by means of simple therapeutic methods.

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SUMMARY

In this work a description of prosthetic treatment of the edentulous patient with cleft palate was showed. Although positive results of surgical treatment diminish the number of these patients, more than once a dentist has to treat effectively patients in their fifties, sixties and seventies whose cleft palate was not treated with modern methods. Authors describe prosthetic solution which enables removing part of acryl from prosthesis and making air chambers. Diminishing of obturator prosthesis mass increases stabilization and retention and contributes to easier adaptation of prosthetic restoration.

Rehabilitacja protetyczna bezzębnych pacjentów z rozszczepem podniebienia

W pracy przedstawiono opis leczenia protetycznego bezzębnej pacjentki z rozszczepem podniebienia. Jakkolwiek pozytywne wyniki leczenia chirurgicznego zmniejszają liczbę tych pacjentów, niejednokrotnie lekarz stomatolog staje przed zadaniem skutecznego leczenia pacjentów będących obecnie w piątej, szóstej, siódmej dekadzie życia, których nie objęły metody współczesnego, skojarzonego leczenia rozszczepów podniebienia. Opisane jest rozwiązanie protetyczne pozwalające na znaczne zmniejszenie masy uzupełnienia protetycznego poprzez usunięcie części akrylu z płyty protezy i obturatora i wykonanie komór powietrznych. Zmniejszenie masy protezy-obturatora zwiększa stabilizację i retencję, przyczyniając się do łatwiejszej adaptacji pacjenta do nowego uzupełnienia protetycznego.