The theme of the class № 7

Comprehensive treatment of patients with mesial bite

The content of the topic:

Mesial occlusion treatment largely depends on etiological agents and the possibility of their efirnination, and also on the degree of morphological and functional disorders manifestation, the complicacy of their elimination in different age periods.

In the period of temporary occlusion much attention is paid to the normalization of alveolar processes and jaws growth during frontal teeth coming out. If upper jaw underdevelopment and lower jaw overgrowth are observed in an infant, it is necessary to massage the alveolar process of the upper jaw in the anterior part for growth stimulation.

At the shortened tongue frenulum a surgical intervention (frenulum plastic surgery) must be carried out. If the child is fed artificially, attention is to be paid to feeding correctness.

One must watch upper incisors eruption and their position in occlusion with the lower ones. In the period of temporary occlusion the measures of fighting agains the pathology come to pernicious habits elimination and normalization of the breathing, swallowing, speech, and mastication functions. To break the child of the habit to breath orally, suck fingers, tongue, different objects, to normalize nasal breathing standard vestibular Hinz' and Schonher's plates may be used.

Hinz' plates

To limit the following lower jaw growth and promote upper jaw physiological development removable or fixed gum shields, disjoining occlusion, may be offered. The upper jaw, brought out from the block at occlusion disconnection, has a possibility of normal development. To inhibit lower jaw

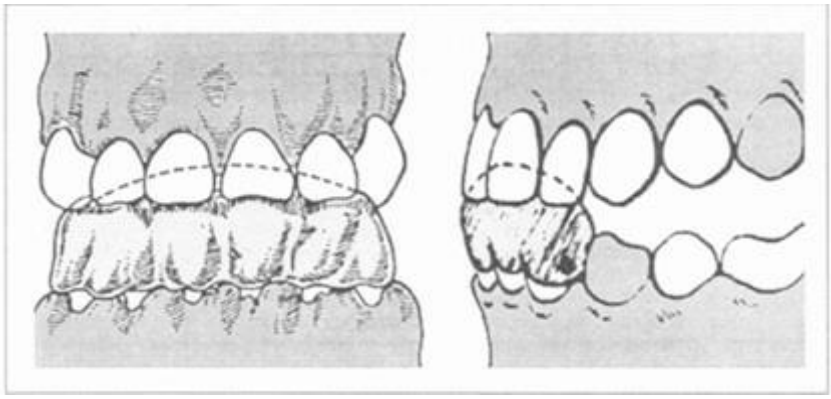
growth in the sagittal direction a chin sling is used, fixed with rubber recoil to a head cap.

In the temporary occlusion period there often takes place lower jaw forced protrusive position, connected with the lower canine teeth, which bear against the opposing teeth with their cutting edges and fix the lower jaw in the forced position. Selective regrinding of the canine teeth tubercles, and sometimes of the incisors sculpri, creates conditions for free lower jaw movements in the sagittal plane and normal upper jaw growth.

Remedial gymnastics is used to train the orbicular muscle of mouth and to attain lips closure and nasal breathing. With this purpose lip activators, and also H. Dass' activator-apparatus (1961) are used. "

In the initial period of transitional dentition, at the age of 5.5 years, mesial occlusion is treated with the same appliances as in the temporary occlusion period.

The best time for treatment is the time before the coming out of the 1st permanent molars and canine teeth. The presence of permanent incisors with deep overbite/ allows using devices with inclined planes – Schwarz' gum shields, Katz' directing crowns. If overbite is insignificant, inclined planes are not indicated, because lateral teeth disconnection will promote the growth of their alveolar processes, which might lead to open bite development. In such cases, i.e. at insignificant overbite, it is expedient to use a removable plate with lateral teeth mastication surfaces covering, and at that permanent molars are to be covered. If there are diaereses in the region of lower frontal teeth, such plate must have an elastic wire arch, located from the labial side of the teeth.



Schwarz' gum shield

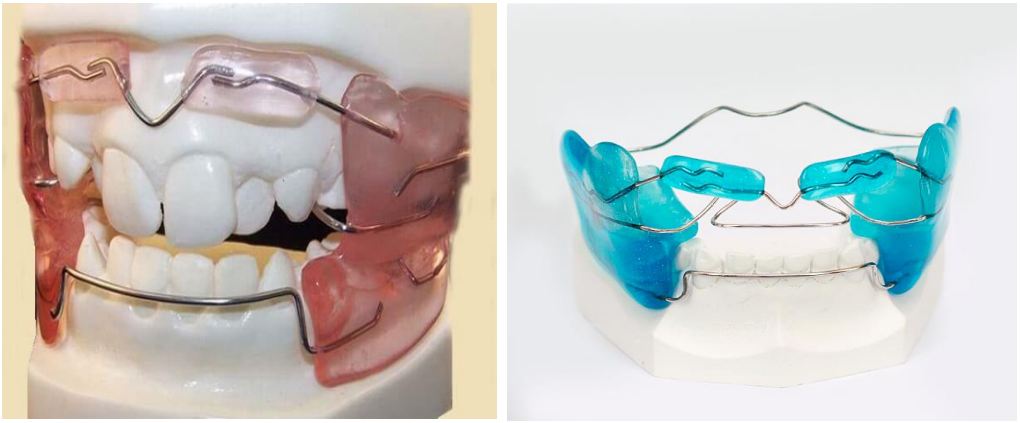
At deep or average reverse overbite and insignificant reverse sagittal gap B.N. Bynin's gum shield may be used.

Bynin's gum shield

At evident upper jaw underdevelopment with insignificant overbite it is indicated to use an orthodontic appliance on the upper jaw with lateral teeth mastication surfaces covering, with elastic activators for the frontal group of teeth protrusion.

At 6–9 years it is recommended to use Frankel's functionally acting device of the 3rd type, Balters' bionator of the 3rd type, Bimmler's elastic occlusion former of the C type.

Andresen-Haupl's activator for the treatment of mesial occlusion is effective at insignificant overbite (to 1.5 mm) or at the combination of mesial occlusion with open bite, which combines with the pernicious habit of tongue sucking or putting it between the dental arches in the region of the defect. The device consists of two basal plates for the lower and upper jaws, joined with plastic in inter-occlusal space.



Frankel's functionally acting device of the 3rd type

Andresen-Haupl's activator

When detecting the constructive occlusion the frontal teeth are set in marginal closure, if it is possible, or their cutting edges are set at one horizontal level. The vestibular arch is located in the region of the lower frontal teeth. If there are diaereses between them, it is activated in the process of treatment, and the plastic, adjacent to the lingual surface of these teeth, is sawn down. To enhance upper incisors protrusion a screw is added to the plate, the saw cut is performed sector-wise.

In the period of second dentition, if there are diaereses in the region of frontal teeth, it is recommended to use gum shields to disconnect occlusion; hooks are welded into gum shields on the vestibular surface, the hooks are opened distally, and rubber recoil is put onto them.

Mesial occlusion treatment in the permanent occlusion period is long-term, requires complex treatment, not infrequently combining with surgical methods. Upper micrognathia treatment is aimed at upper jaw enlargement.This is achieved with the help of orthodontic appliances with activators and dilating devices (screws, wire dilators), which promote upper frontal teeth protrusion, and lateral jaw parts dilation. Besides, this form of mesial occlusion also has clinical varieties, which depend on the degree of upper jaw underdevelopment, individual teeth quantity and position, overbite depth. The choice of treatment method and orthodontic appliances construction must be individual.

At the big lower and normal upper jaws the treatment must consist in lower jaw downsizing, which can be achieved by means of frontal teeth shifting backwards at the expense of spaces between them. If there are no enough spaces, the treatment is conducted with teeth extraction (more often – premolars), after what the frontal group of teeth is transferred with the help of removable orthodontic appliances. When a canine tooth is transferred distally the 6th and 7th teeth are usually taken as support, if it is possible, for the place of the extracted

tooth not to be replaced by the lateral teeth, displaced forward. Fixed appliances are used – A.I. Pozdniakova's, Angle's with intermaxillary recoils.

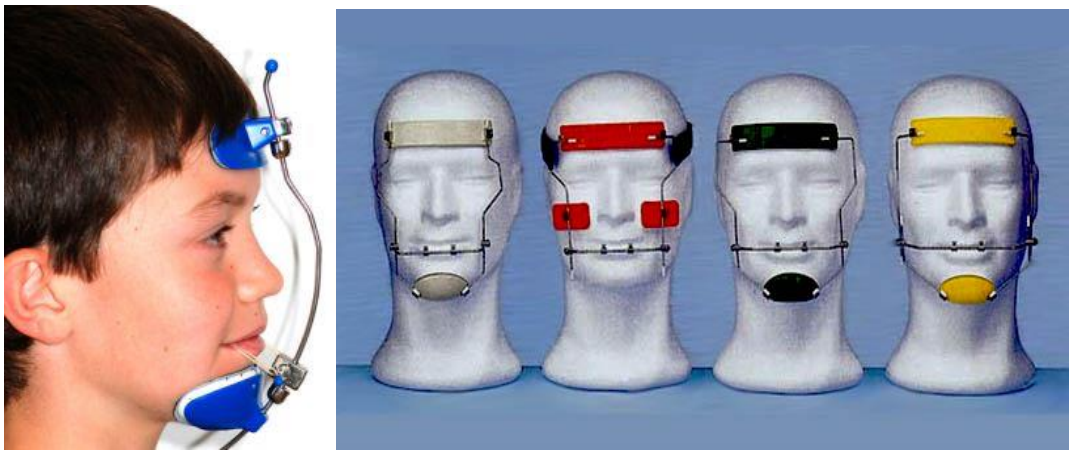
In case of teeth extraction it is better to use bracket system for the treatment. If the lower jaw is considerably big, orthodontic treatment alone will not produce the desired effect. The treatment is to be combined (surgical-orthodontic), for which purpose the alveolar process or the lower jaw body is cut partially, with subsequent bone fragments set in the position eliminating the deformation. At that, orthodontic preparation precedes the surgical procedure, and the orthodontist finishes the treatment.

The most widespread is the clinical case, when mesial occlusion arises as a result of upper jaw underdevelopment and lower jaw overgrowth. Treatment measures in this case are directed at upper jaw enlargement and lower jaw downsizing.

Orthodontic treatment of mesial occlusion may be combined with compact osteotomy on the upper jaw alveolar process. This intervention allows more corpus transfer of the upper frontal teeth in the vestibular direction and in such a way the change of the alveolar process profile form.

To improve orthodontic treatment results physiotherapeutic methods are used (vacuum therapy, vibration influence, MRT).

In the permanent period of occlusion preference should be given to fixed mechanically acting appliances in complex with facial masks, with the help of which it is possible to obtain constant results of treatment.



Face masks