

Jahanshahi F., Alamisaed S.

THE STRUCTURE OF TRANSVERSE PALATINE SUTURE IN MALES OF DIFFERENT AGES ACCORDING TO CBCT DATA

Tutor: PhD, associate professor Gorlacheva T.V.

*Department of Prosthetic Dentistry and Orthodontic
Belarusian State Medical University, Minsk*

Relevance. To achieve an orthopedic effect in the form of stimulation of the growth of the upper jaw in the treatment of patients with mesial bite, it is important to know the degree of ossification of the transverse palatine suture in each clinical case.

Aim: to determine the structural features of the transverse palatine suture in males of different ages.

Methods. The structure of the transverse palatine suture over a wide range in horizontal CBCT sections in 54 males aged 6 to 20 years. Determine the shape of the suture, locate its lateral portions toward the first upper molar, as well as the protrusion and minimum form of its bone tissue. Descriptive statistics were used. The significance of features in groups was obtained using nonparametric methods (Kruskal-Wallis test, z-test, χ^2 test).

Results and their discussion. When studying the shape of the transverse palatal suture using CBCT data, we found three main types: straight (13.8%), stepped (71.3%), and arched (14.9%). No correlation was found between suture shape and the age of the subjects examined, which can be explained by individual structural differences. An assessment of the position of the lateral portion of the transverse palatine suture relative to the first maxillary permanent molars revealed that in subjects aged 6, 10, 12, and 14, this structure was most often located anteriorly; in those aged 11, 13, 15, and 16, it was at the level of the tooth; and in those aged 19 and 20, it was located posteriorly. This may be related to the formation and eruption of the molars, as well as the longitudinal growth of the hard palate. Age affects the bone density in the transverse palatine suture area: its minimum ($H=25.2$; $p<0.05$) and maximum ($H=27.4$; $p<0.01$) values. Statistically significant differences in the minimum value of this parameter were found in the groups of 6-8-year-old boys (170.0 (141.0-240.0)) and 18-year-old boys (346.5 (272.0 – 660.0)) ($z=3.49$; $p<0.05$). Statistically significant differences in the maximum value of bone density in the transverse palatine suture area were also found in the groups of 9-year-old boys (515.0 (472.5 - 565.0)) and 12-year-old boys (731.0 (728.0 – 732.0)) ($z_{9-12}=3.43$; $p<0.05$).

Conclusions. Three main forms of transverse palatal suture were identified according to CBCT data: straight, stepped and arched. There is an age-related dynamics of the distal displacement of the level of the lateral parts of the transverse palatine suture in relation to the upper molars. The minimum value of bone density of the transverse palatine suture was recorded in boys aged 6–9 years.