

Temporomandibular joint skeletal morphology in children and adults

Characteristic bone profile of the temporomandibular joint (TMJ) develops and grows up to late teenage years.^[1] TMJ bone structures alter their morphology according to functional and pathological conditions throughout life. In this study, differences in TMJ skeletal morphology between children and young adults (aged between 20 and 24 years) were compared.^[2] The results of this study show the changes of TMJ bony components during the period of maturity.

Internal derangement is the most frequently encountered disorder of the TMJ and is prevalent in teenagers. Many investigators have suggested a possible relationship between the etiology of TMJ disk displacement and development of TMJ bony components.^[3] Some investigators have suggested that a steep articular eminence is a predisposing factor but others have failed to confirm this.^[4] As suggested in this report, there were significant differences in TMJ skeletal morphology between children and young adults. The glenoid fossa in the children was flat compared to that in the adults (depth of glenoid fossa of children was shallower than that of adults and anterior slope inclination of glenoid fossa of children was smaller than that of adults, but posterior slope inclination of glenoid fossa of children was similar to that of adults). This shows that, the height of the articular eminence increases with growth. The disharmony between the growth of the articular eminence and TMJ function may be one of the etiological factors that influence TMJ disk displacement.

Unfortunately, the study lacks detailed information of disk position of subjects. It must be noted that there is a close relationship between TMJ disk displacement and TMJ bony

morphology. For example, it is reported that flattening of the articular eminence is the result of TMJ internal derangement.^[5] A possible relationship between condylar size and disk displacement is also reported.^[6] To discuss the bony morphology of TMJ in totality, careful considerations as to TMJ disk position are necessary.

Kurita H

Department of Dentistry and Oral Surgery, Shinshu University
School of Medicine, Japan

Correspondence:

H Kurita, E-mail: hkurita@shinshu-u.ac.jp

References

1. Oberg T, Carlsson GE, Fajers CM. The temporomandibular joint: A morphological study on a human autopsy material. *Acta Odontol Scand* 1971;29:349-83.
2. Meng F, Liu Y, Hu K, Zhao Y, Kong L, Zhou S. A comparative study of the skeletal morphology of temporo-mandibular joint of children and adults. *J Postgrad Med* 2008;54:191-4.
3. Tominaga K, Konoo T, Morimoto Y, Tanaka T, Habu M, Fukuda J. Changes in temporomandibular disc position during growth in young Japanese. *Dentomaxillofac Radiol* 2007;36:397-401.
4. Kurita H, Ohtsuka A, Kobayashi H, Kurashina K. Is the morphology of the articular eminence of the temporomandibular joint a predisposing factor for disc displacement? *Dentomaxillofac Radiol* 2000;29:159-62.
5. Kurita H, Ohtsuka A, Kobayashi H, Kurashina K. Flattening of the articular eminence correlates with progressive internal derangement of the temporomandibular joint. *Dentomaxillofac Radiol* 2000;29:277-9.
6. Kurita H, Ohtsuka A, Kobayashi H, Kurashina K. Alteration of the horizontal mandibular condylar size of associated with temporomandibular joint internal derangement in adult female. *Dentomaxillofac Radiol* 2002;31:373-8.