Hubungan Kejadian Gigi Molar Tiga Rahang Bawah Impaksi dengan Morfologi Tulang Mandibula (Evaluasi Radiografi Panoramik Digital di RSKGM FKG UI) = Association of Impacted Mandibular Third Molar and Mandibular Bone Morphology (Evaluation of Digital Panoramic at RSKGM FKG UI)

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Abstrak

Latar Belakang: Gigi impaksi merupakan kondisi ketika gigi mengalami kegagalan untuk erupsi sepenuhnya ke lengkung gigi dalam waktu yang diharapkan. Berdasarkan frekuensi kejadiannya, gigi molar tiga rahang bawah (M3 RB) paling sering mengalami impaksi dengan prevalensi mencapai 60.6% di Indonesia. Salah satu faktor lokal utama terjadinya gigi M3 RB impaksi adalah kurangnya ruang pada lengkung rahang bawah yang sering dikaitkan dengan proses pertumbuhan tulang mandibula. Beberapa studi menunjukkan bahwa ukuran morfologi tulang mandibula yang mencerminkan kuantitas dan arah pertumbuhan tulang seperti tinggi simfisis mandibula, panjang badan mandibula, dan sudut gonial berpotensi untuk mempengaruhi kejadian gigi M3 RB impaksi.

Tujuan: Mengevaluasi hubungan kejadian gigi M3 RB impaksi dengan morfologi tulang mandibula.

Metode: Sebanyak 110 sampel sisi rahang bawah diperoleh dari 67 data radiografi panoramik digital pasien RSKGM FKG UI (50 perempuan dan 17 laki-laki; usia: 21.22–30.91 tahun). Sampel yang tersedia kemudian dibagi menjadi kelompok kasus (sisi rahang dengan gigi M3 RB yang mengalami impaksi baik fully unerupted atau partially erupted) dan kelompok kontrol (sisi rahang dengan gigi M3 RB yang erupsi sempurna) untuk dilakukan perbandingan. Pada studi ini, uji-t independen dan uji Anova 1 arah digunakan untuk menganalisis hubungan status impaksi gigi M3 RB dan klasifikasinya dengan morfologi tulang mandibula pada data berdistribusi normal. Di sisi lain, uji Mann-Whitney U dan Uji Kruskal Wallis digunakan untuk menganalisis hubungan status impaksi gigi M3 RB dan klasifikasinya dengan morfologi tulang mandibula pada data berdistribusi tidak normal.

Hasil: Tinggi simfisis mandibula dan sudut gonial secara statistik ($p < 0.05$) lebih rendah pada kelompok kasus. Sementara itu, panjang badan mandibula antara kelompok kasus dan kelompok kontrol tidak berbeda secara statistik ($p > 0.05$). Pada hasil tinjauan pasien laki-laki saja, tidak ditemukan adanya perbedaan tinggi simfisis, panjang badan mandibula, dan sudut gonial antara kelompok kasus dan kelompok kontrol secara statistik ($p > 0.05$).

Kesimpulan: Terdapat hubungan kejadian gigi M3 RB impaksi dengan ukuran tinggi simfisis dan sudut gonial. Semakin kecil ukuran tinggi simfisis dan sudut gonial, semakin besar kemungkinan gigi M3 RB mengalami impaksi. Di sisi lain, tidak ditemukan adanya hubungan kejadian gigi M3 RB impaksi dengan ukuran panjang badan mandibula.
.....Background: An impacted tooth is a condition when a tooth fails to fully erupt into the dental arch

within the expected time. Based on the frequency of occurrence, the mandibular third molar (M3M) is the most frequently impacted with a prevalence of 60.6% in Indonesia. One of the main local factors for impacted M3M is the lack of space in the lower arch which is often associated with the growth process of the mandibular bone. Several studies have shown that the size of the mandibular bone morphology that reflects the quantity and direction of bone growth such as symphisis mandibular height, mandibular body length, and gonial angle has the potential to influence the occurance of impacted M3M.

Objective: To evaluate the relationship between the occurance of impacted M3M and mandibular bone morphology.

Methods: A total of 110 samples of the mandibular side were obtained from 67 digital panoramic radiographic data of RSKGM FKG UI patients (50 women and 17 men; age: 21.22–30.91 years). The data were then divided into the case group (jaw side with M3M that were fully unerupted or partially erupted) and the control group (jaw side with M3M that fully erupted) for comparison. In this study, an independent t-test and 1-way ANOVA test was used to analyze the relationship between the impaction status of M3M and their classification with the morphology of the mandible in normally distributed data. On the other hand, the Mann-Whitney U test and the Kruskal Wallis test were used to analyze the relationship between the impaction status of the M3M tooth and its classification with the morphology of the mandible bone in abnormally distributed data.

Results: Symphisis mandibular height and gonial angle were statistically ($p < 0.05$) lower in the case group. Meanwhile, the mandibular body length between the case group and the control group was not statistically different ($p > 0.05$). In the results of the review of male patients only, there was no statistical difference in symphisis height, mandibular body length, and gonial angle between the case group and control group ($p > 0.05$).

Conclusion: There is a relationship between the occurance of impacted M3M with the size of the symphisis height and gonial angle. The smaller the size of the symphisis height and gonial angle, the more likely the M3M to experience impaction. On the other hand, there was no relationship between the occurance of impacted M3M and mandibular body length.