

INTISARI

Impaksi gigi adalah suatu keadaan gigi erupsi pada posisi yang tidak seharusnya dan berisiko menurunkan densitas tulang mandibula secara lokal. Penurunan densitas tulang mandibula yang terjadi terus menerus dapat menimbulkan berbagai risiko kesehatan. Penelitian ini bertujuan untuk menganalisis perbedaan densitas mandibula yang diukur menggunakan indeks Watanabe (indeks W) pada radiograf panoramik berdasarkan kelompok angulasi pada kasus impaksi gigi molar ketiga mandibula.

Penelitian ini merupakan penelitian observasional analitik dengan pendekatan *cross-sectional* menggunakan 160 sampel impaksi gigi molar ketiga mandibula yang tampak pada radiograf panoramik. Sampel terbagi menjadi lima kelompok angulasi berdasarkan klasifikasi Winter, yaitu vertikal, mesioangular, horizontal, distoangular, dan *others*. Pengukuran densitas mandibula dilakukan menggunakan indeks W. Hasil penelitian menunjukkan bahwa rerata indeks W terendah pada kelompok mesioangular dan rerata nilai indeks W tertinggi pada kelompok vertikal dan horizontal. Hasil uji Kruskal-Wallis mengindikasikan tidak terdapat perbedaan signifikan ($p > 0,05$) densitas mandibula berdasarkan indeks W antar kelompok angulasi impaksi gigi molar ketiga mandibula.

Hasil penelitian ini mengungkapkan bahwa meskipun rerata densitas mandibula pada angulasi mesioangular cenderung lebih rendah di antara kelompok angulasi lain, tetapi perbedaan rerata tersebut tidak cukup signifikan secara statistik. Perubahan densitas tulang mandibula kemungkinan lebih dipengaruhi faktor lain seperti ras, genetik, dan kondisi sistemik, dibandingkan angulasi impaksi gigi molar ketiga mandibula.

Kata kunci: impaksi, molar, densitas tulang, radiograf panoramik

ABSTRACT

Tooth impaction is a condition in which a tooth fails to erupt into its proper position and may pose a risk of localized reduction in mandibular bone density. Continuous reduction in mandibular bone density may lead to various health risks. This study aimed to analyze differences in mandibular bone density measured using the Watanabe index (W index) on panoramic radiographs based on angular groups in cases of impacted mandibular third molars.

This study employed an analytic observational design with a cross-sectional approach, using 160 samples of impacted mandibular third molars identified on panoramic radiographs. The samples were classified into five angular groups according to Winter's classification, namely vertical, mesioangular, horizontal, distoangular, and others. Mandibular bone density was assessed using the W index. The results showed that the lowest mean W index was observed in the mesioangular group, whereas the highest mean W index values were found in the vertical and horizontal groups. The Kruskal–Wallis test indicated no statistically significant difference ($p > 0.05$) in mandibular bone density based on the W index among the angular groups of impacted mandibular third molars.

These findings suggest that although mandibular bone density in the mesioangular impaction group tended to be lower than in other angular groups, the difference was not statistically significant. Thus, changes in mandibular bone density are likely influenced more by other factors, such as race, genetic predisposition, and systemic conditions, rather than by the angulation of mandibular third molar impaction.

Keywords: impacted, molar, bone density, radiography, panoramic