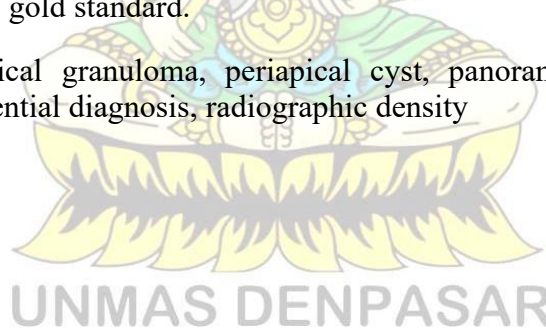


ABSTRACT

Periapical granuloma and cyst are the most frequently encountered periapical lesions with similar radiographic characteristics, presenting challenges in differential diagnosis using panoramic radiography. This study aimed to identify the differences in radiographic characteristics between periapical granuloma and cyst in patients aged 20-30 years using panoramic radiography. An observational analytical cross-sectional study was conducted on 125 panoramic radiograph samples (57 granuloma cases and 68 periapical cyst cases) from January 2022 to September 2025. Evaluated parameters included lesion border, lesion shape, lesion size, radiographic density reduction, and anatomical location. Data analysis employed descriptive statistics and Mann-Whitney U test for numerical variables. The prevalence of periapical cysts (1.03%) was slightly higher than granulomas (0.86%). Results demonstrated consistent differences (100%) in lesions borders and shapes: all periapical cyst exhibited well-defined, corticated borders with circular shapes, Whereas granuloma cases show visible borders that are not well-demarcated, without cortication and with an irregular shape. Granuloma were more predominant in females (73.68%), while cysts were relatively balance (51.47%). Both lesions were more frequently found in the mandible with predilection for the molar region. Lesion size ($p=0.531$) and radiographic density reduction ($p=0.664$) parameters showed no statistically significant differences ($p\geq 0,05$). Lesions border and shape demonstrated high discriminative value in differentiating periapical granuloma and cysts, whereas size and density showed substantial overlap. Definitive diagnosis still requires histopathological examinations as the gold standard.

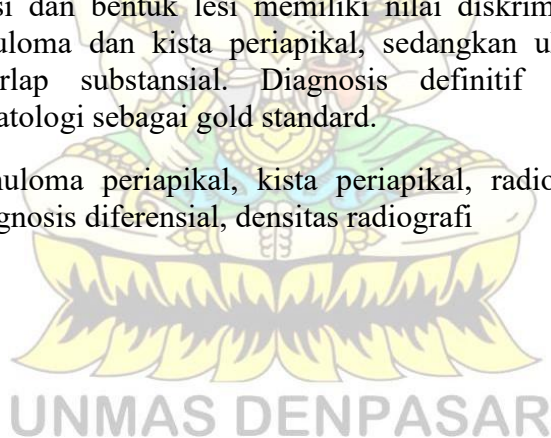
Keywords: periapical granuloma, periapical cyst, panoramic radiography, differential diagnosis, radiographic density



ABSTRAK

Granuloma dan kista periapikal merupakan lesi periapikal yang paling sering ditemukan dengan karakteristik radiografi yang mirip, sehingga menjadi tantangan dalam diagnosis diferensial menggunakan radiografi panoramik. Penelitian ini bertujuan mengetahui perbedaan karakteristik radiografi granuloma dan kista periapikal pada pasien berusia 20-30 tahun menggunakan radiografi panoramik. Penelitian observasional analisis cross-sectional dilakukan terhadap 125 sampel radiografi panoramik (57 kasus granuloma dan 68 kasus kista periapikal) periode Januari 2022 – September 2025. Parameter yang dievaluasi meliputi batas lesi, bentuk lesi, ukuran lesi, penurunan densitas radiografi dan lokasi anatomis. Analisis data menggunakan statistik deskriptif dan uji Mann-Whitney U untuk variabel numerik. Prevalensi kista periapikal (1,03%) sedikit lebih tinggi dibanding granuloma (0,86%). Hasil menunjukkan perbedaan konsisten (100%) pada batas dan bentuk lesi: seluruh kista periapikal memiliki batas jelas (well-defined), tegas, terkortikasi dengan berbentuk sirkular. Sedangkan kasus granuloma menunjukkan batas jelas, tidak tegas tanpa kortikasi dengan berbentuk irregular. Granuloma lebih dominan pada perempuan (73,68%), sementara kista relatif seimbang (51,47%). Kedua lesi lebih banyak ditemukan di mandibula dengan predileksi regio molar. Parameter ukuran lesi ($p=0,531$) dan penurunan densitas radiografi ($p=0,664$) tidak menunjukkan perbedaan signifikan ($p \geq 0,05$). Batas lesi dan bentuk lesi memiliki nilai diskriminatif tinggi dalam membedakan granuloma dan kista periapikal, sedangkan ukuran dan densitas menunjukkan overlap substansial. Diagnosis definitif tetap memerlukan pemeriksaan histopatologi sebagai gold standard.

Kata Kunci: granuloma periapikal, kista periapikal, radiografi panoramik, diagnosis diferensial, densitas radiografi



UNMAS DENPASAR