

COMPREHENSIVE REVIEW OF CLINICAL AND IMAGING EVALUATION OF THIRD MOLARS

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Abstract: The evaluation of third molars, commonly known as wisdom teeth, is an essential aspect of dental practice. The presence, position, and eruption status of these teeth can have significant implications for oral health and overall well-being. This comprehensive review aims to provide an in-depth analysis of the clinical and imaging evaluation of third molars. The review explores the indications for evaluating third molars, various clinical examination techniques, and the significance of panoramic radiographs, cone-beam computed tomography (CBCT), and other imaging modalities in assessing these teeth. Furthermore, the review discusses the assessment of third molar impactions, associated pathologies, and potential complications. By delving into the comprehensive evaluation of third molars, this review aims to enhance dental professionals' understanding and decision-making when managing these teeth in clinical practice.

Keywords: Third molars, wisdom teeth, comprehensive review, clinical evaluation, imaging evaluation, panoramic radiograph, cone-beam computed tomography, CBCT, impaction, pathologies, complications, dental practice, oral health.

INTRODUCTION

Third molars, commonly referred to as wisdom teeth, are the last set of molars that typically erupt in late adolescence or early adulthood. The evaluation of these teeth is a critical aspect of dental practice, as their presence and position can impact oral health and overall well-being. However, third molars are often associated with various issues, such as impaction, pathologies, and potential complications. Therefore, a comprehensive understanding of the clinical and imaging evaluation of third molars is essential for dental professionals to make informed decisions regarding their management.

This comprehensive review aims to provide a detailed analysis of the clinical and imaging evaluation of third molars. The review will explore the indications for evaluating third molars, the importance of thorough clinical examination techniques, and the significance of different imaging modalities, including panoramic radiographs and cone-beam computed tomography (CBCT), in assessing these teeth. Additionally, the review will discuss the assessment of third molar impactions, associated pathologies, and potential complications that may arise.

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By delving into the comprehensive evaluation of third molars, this review seeks to enhance dental professionals' knowledge and skills in diagnosing and managing these teeth effectively. A thorough understanding of the clinical and imaging evaluation will enable dental practitioners to provide optimal care, ranging from monitoring the eruption and alignment of fully erupted third molars to determining the necessity for extraction in cases of impaction or pathological conditions.

METHOD

For this comprehensive review, a systematic literature search was conducted using various scientific databases, including PubMed, MEDLINE, and Google Scholar. Keywords related to third molars, wisdom teeth, clinical evaluation, imaging evaluation, panoramic radiographs, CBCT, impaction, pathologies, and complications were used to identify relevant articles.

Inclusion criteria comprised original research articles, systematic reviews, meta-analyses, and evidence-based guidelines related to the clinical and imaging evaluation of third molars. Studies involving both adolescent and adult populations were considered, with no restrictions on publication date.

The search yielded a substantial number of articles, which were screened based on their relevance to the comprehensive evaluation of third molars. Articles that met the inclusion criteria were selected for data extraction and analysis. The information obtained from these selected studies was used to form the basis of this comprehensive review.

By employing a systematic approach to identify and analyze relevant literature, this comprehensive review aims to provide a comprehensive overview of the clinical and imaging evaluation of third molars. The findings and insights obtained from this review will serve to enhance dental professionals' knowledge and decision-making in managing third molars, ultimately promoting better oral health outcomes for patients.

RESULT

The comprehensive review of the clinical and imaging evaluation of third molars encompassed a thorough analysis of the available literature. The evaluation process includes clinical examination techniques, imaging modalities, assessment of impactions, associated pathologies, and potential complications related to these teeth.

Clinical Evaluation:

Clinical examination of third molars involves assessing the presence, position, and eruption status of these teeth. Dental professionals must carefully examine the oral cavity, assessing the occlusal relationship, soft tissue condition, and signs of inflammation around the third molars. Palpation and mobility tests aid in detecting potential pathological conditions, while probing helps evaluate the periodontal health of adjacent teeth.

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Imaging Evaluation:

Imaging plays a crucial role in the comprehensive evaluation of third molars. Panoramic radiographs provide a valuable overview of the entire dentition, allowing the visualization of third molar angulation, impaction, and proximity to adjacent structures. For complex cases, cone-beam computed tomography (CBCT) provides a more detailed three-dimensional view, aiding in precise assessment and treatment planning.

Assessment of Impactions:

Third molar impactions occur when these teeth fail to erupt fully or are partially covered by bone or soft tissue. The assessment of impactions involves determining their angulation, depth, and relationship to adjacent structures. Various classification systems, such as Pell and Gregory and Winter's classification, aid in describing the impaction patterns.

Associated Pathologies:

Third molars can be associated with several pathologies, such as pericoronitis, caries, cysts, and tumors. Timely detection and assessment of these pathologies are crucial to prevent potential complications and to formulate appropriate treatment plans.

Potential Complications:

Complications associated with third molars include pericoronitis, periodontal pocket formation, root resorption of adjacent teeth, cystic changes, and potential nerve injuries during extraction. A comprehensive evaluation helps identify patients at risk of developing complications, enabling early intervention and preventive measures.

DISCUSSION

The comprehensive evaluation of third molars is essential for dental professionals to make informed decisions regarding their management. Clinical examination provides valuable information about the current status of these teeth, while imaging modalities offer a detailed view of impactions and associated pathologies. Early identification of impactions and pathologies allows for timely intervention and minimizes potential complications.

CBCT has emerged as a valuable tool in the evaluation of complex impactions and associated pathologies, providing superior diagnostic information compared to traditional radiographs. However, the decision to use CBCT should be judicious, considering the potential risks associated with radiation exposure and the patient's individual needs.

CONCLUSION

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The comprehensive review of the clinical and imaging evaluation of third molars highlights the importance of a thorough assessment of these teeth in dental practice. A combination of clinical examination and imaging modalities facilitates accurate diagnosis and treatment planning for third molar impactions and associated pathologies. Dental professionals should be aware of potential complications and be proactive in managing these teeth to optimize oral health outcomes for their patients. Early identification and timely intervention can prevent potential complications and improve patient comfort and well-being. By incorporating a comprehensive evaluation approach, dental professionals can provide optimal care and make informed decisions regarding third molar management in their clinical practice.

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