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REVIEW ON ASSOCIATION OF TMJD AND THIRD MOLAR SURGERY

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ABSTRACT:

The complex range of illnesses known as temporomandibular disorders (TMD) involve the masticatory muscles, the temporomandibular joint (TMJ), and related structures. Third molar extractions have been a topic of discussion among the different factors determining TMD. By looking at available data, theory-based explanations, and practical applications, this review seeks to provide a thorough analysis of the connection between third molar extractions and TMD.

INTRODUCTION:

The intricate temporomandibular joint, which joins the jawbone and skull, is impacted by temporomandibular joint disorder (TMJD). A variety of symptoms are associated with this illness, such as discomfort, stiffness, popping or clicking sounds, and trouble moving the jaw. TMJD can seriously impair a person's quality of life by interfering with their ability to speak, eat, and even sleep.

A common cause of TMJD is misalignment of the jaw or problems with the muscles and ligaments that surround the joint. Numerous reasons, like as genetics, jaw trauma, bad posture, or behaviors like bruxism—the grinding or clenching of teeth—can cause this misalignment. Additionally, clenching one's jaw muscles unintentionally is a way that stress and anxiety can worsen the symptoms of TMJD.

The symptoms of TMJD might differ greatly from person to person; some may just have slight discomfort while others may have excruciating agony. Typical indications of TMJD include:

Pain: Prolonged jaw joint soreness or pain that may spread to the shoulders, neck, or face.
Limited Jaw Movement: Having trouble opening or shutting your mouth completely, along with a locked or trapped feeling in your jaw.
Clicking or Popping noises: When moving the jaw, there may be audible clicking, popping, or grating noises that point to joint abnormalities.
Muscle Stiffness: The jaw muscles can become tight or stiff, particularly in the morning or after extended durations of use.
Headaches: Prolonged headaches that frequently resemble tension headaches can be brought on by transferred jaw pain or muscle stress.

Pain, discomfort, and a reduced quality of life are common symptoms of temporomandibular disorders (TMD). Extraction of the wisdom teeth, also referred to as the third molar, has been proposed as a possible risk factor for the onset or aggravation of TMD. A thorough inquiry is necessary because the nature of this link is still unclear.

Materials and methods:
The association between temporomandibular joint disorder (TMJD) and third molar (wisdom tooth) surgery has been a subject of interest in dental research. In this study, a comprehensive review was conducted to analyze existing literature on this topic.

Materials and methods involved systematic searches of electronic databases such as PubMed, Scopus, and Web of Science using relevant keywords. Inclusion criteria encompassed studies examining the relationship between TMJD and third molar surgery, published in peer-reviewed journals.

Implications and patient care:
Studies were screened based on predetermined criteria, including relevance, study design, and quality assessment. Data extraction focused on key findings regarding the incidence, prevalence, and risk factors associated with TMJD following third molar surgery.

Statistical analyses, when applicable, were performed to quantify the strength of association between the two variables. Limitations of the included studies were also addressed, such as sample size variations and potential biases.

Overall, this review aimed to provide a comprehensive synthesis of the current evidence, shedding light on the complex interplay between TMJD and third molar surgery, thus facilitating better understanding and management of these conditions in clinical practice.

The implications for patient care arising from the association between TMJD and third molar surgery are multifaceted. Firstly, clinicians need to be vigilant in preoperative assessment, identifying patients at risk of developing TMJD post-surgery. This may involve thorough examination of temporomandibular joint function, dental occlusion, and relevant medical history. Patient education regarding potential TMJD symptoms and the importance of postoperative follow-up is crucial for early detection and intervention.

Moreover, clinicians should consider personalized treatment plans that address both surgical and non-surgical modalities based on individual patient characteristics and risk factors. Close collaboration between dental and medical professionals may facilitate comprehensive care,

integrating approaches such as physiotherapy, pharmacological interventions, and psychological support to optimize patient outcomes. Overall, a proactive and patient-centered approach is essential in mitigating TMJD-related complications and enhancing the overall quality of care for individuals undergoing third molar surgery.

Discussion:
There is a complicated and multifaceted association between third molar extractions and TMD. There have been contradictory reports from several studies about the relationship between the two. While some studies find a positive link, others find no evidence of a meaningful connection. The inconsistent results are a result of methodological variances in study design, sample size, follow-up period, and assessment criteria.

Potential Mechanisms:
A number of possible explanations for the connection between TMD and third molar extractions have been put up. These include anatomical alterations that result in changed biomechanics, surgical trauma that causes tissue damage and inflammation, psychological effects like procedure-related stress and anxiety, and underlying predispositions like malocclusion and occlusal discrepancies.
Clinicians should proceed with caution when proposing third molar extractions despite the conflicting evidence, especially in patients who already have TMD symptoms or risk factors. In order to identify patients who are more likely to develop TMD after extraction, a comprehensive evaluation of the patient's medical history, symptoms, and clinical examination should be part of the preoperative screening process. Maxillofacial specialists, dentists, and oral surgeons must work with collaboratively to maximize patient care and reduce any negative consequences.
Future research direction:
Future research directions in the realm of TMJD and third molar surgery hold significant potential for advancing understanding and clinical management. One avenue for exploration could involve longitudinal studies to elucidate the long-term outcomes of TMJD following third molar surgery, considering factors such as age, gender, and surgical technique. Additionally, investigating the role of imaging modalities, such as MRI and cone-beam computed tomography (CBCT), in predicting and diagnosing postoperative TMJD could enhance early detection and intervention strategies.

Furthermore, exploring the impact of adjunctive therapies, such as physiotherapy and pharmacological interventions, on mitigating TMJD symptoms post-surgery may offer valuable insights into comprehensive treatment approaches. Additionally, comparative studies evaluating the efficacy and safety of different surgical techniques, including minimally invasive approaches, could inform optimal treatment protocols while minimizing TMJD risk.

Moreover, interdisciplinary collaboration between dentistry, orthodontics, and surgery may yield innovative strategies for TMJD prevention and management, considering holistic patient care approaches. Lastly, investigating genetic predispositions and biomarkers associated with TMJD susceptibility post-surgery could pave the way for personalized treatment strategies. These future research directions have the potential to enhance clinical outcomes and improve the quality of life for patients undergoing third molar surgery.

Conclusion:
In conclusion, there is still disagreement over the connection between TMJ problems and third molar extractions. Although some research points to a possible correlation, the data is contradictory and inconclusive. To clarify the true nature of this association, future research

should concentrate on well-designed prospective studies with bigger sample sizes and established assessment criteria.

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