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Systematic Review
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Recurrent dislocation: scientific evidence and management following a systematic review

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Abstract. Recurrent mandibular dislocation is a rare condition that can have a negative impact on quality of life. Different surgical techniques are employed in the treatment of this condition, and the demand for maximum healthcare quality has contributed to the implementation of evidence-based clinical practice. The objective of this study was to determine the level of scientific evidence in articles reporting open surgical treatment for recurrent mandibular dislocation. A comprehensive search strategy was conducted to locate relevant articles in the PubMed and Web of Science databases on open surgical treatment for recurrent mandibular dislocation published between January 1974 and August 2014. These were classified into one of the five established levels/sublevels of evidence: the level of evidence was determined based on the classification proposed by the Oxford Centre for Evidence-Based Medicine. One hundred and fourteen articles were identified, 91 of which were excluded based on the eligibility criteria. Thus, 23 articles were selected for inclusion in the review. All of the selected articles were rated as level 4 (low quality) regarding the level of evidence. The present review revealed that articles on open surgical treatment for recurrent mandibular dislocation exhibit a low level of scientific evidence. Thus, further studies on this topic with greater methodological rigour are needed.

Key words: surgical procedures; operative; temporomandibular joint disorders; evidence-based practice; review.

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Diverse methods have been employed for the prevention and treatment of mandibular dislocation. In recent decades, a number of cases of this condition have been described, offering a wide variety of treatment options from non-surgical conservative approaches to invasive surgical procedures. However, divergent opinions remain regarding the most effective method.

Some surgical techniques have fallen into disuse, whereas others continue to be employed widely, even after more than 50 years since their advent. Eminectomy,[1] an increase in the articular eminence with the use of grafts,[2–4] the Dautrey procedure,[5–7] and the placement of implants, such as miniplates,[8–10] are well-known methods.

The decision regarding the most effective treatment should be based on scientific evidence. Evidence-based medicine is the conscious, explicit, judicious use of the best current evidence in decision-making with regard to care for the individual patient and involves combining clinical experience with the best available external clinical evidence available through systematic research, while also considering the patient's preferences.[11] This approach can reduce risks and offer the best treatment option based on the individual circumstances of each patient.

Studies that provide external evidence for application in clinical practice can be

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grouped according to their respective designs. When well-designed, executed, and reported, the systematic review and randomized controlled trial (RCT) offer the best evidence for most clinical issues. Other designs with a lower level of evidence include cohort studies, case–control studies, case series, case reports, basic and laboratory research, expert opinions, and non-systematic reviews. The Oxford Centre of Evidence-based Medicine (CEBM) levels of evidence represent one method used to assess the quality of individual studies.

As the level of scientific evidence on open surgical treatment for recurrent mandibular dislocation has not been evaluated previously, the aim of the present review was to apply the CEBM system to determine the level of evidence available in the literature considering the clinical aspects involved in recurrent mandibular dislocation. The aim of this study was to benchmark the best studies reported to date in this area. It was not intended to perform a meta-analysis of the reported outcomes from the selected studies unless they were studies providing a high level of evidence.

Materials and methods

Focused question

The following question guided this study: What form of treatment for primary recurrent dislocation results in the lowest rate of recurrence?

Search strategy

A search strategy was developed to identify articles that made reference to open surgical treatment for recurrent mandibular dislocation (Table 1). Searches were performed in the PubMed and Web of Science databases for articles published between January 1, 1974 and August 31, 2014. An additional manual search was performed in both databases. The lists of references from the two databases were exported into Mendeley Desktop version 1.12.4 computer program (Mendeley Ltd, London, UK) to identify any duplicate articles.

For the sample selection, two independent reviewers who had undergone a training and calibration exercise and who had experience with the topic read the titles and abstracts to determine whether the articles met the inclusion criteria for the analysis of the level of scientific evidence. Potentially relevant studies were retrieved and submitted to full-text analysis to determine whether the papers actually met the inclusion criteria. Disagreements between the reviewers were resolved by consensus. If necessary, a third reviewer was consulted. Letters to the editor and articles that did not address open surgical treatment for recurrent mandibular dislocation were excluded. Table 2 displays the eligibility criteria based on the intent of the present review and the filters employed.

The articles selected in the first phase of the study were classified with regard to the level of scientific evidence based on the classification system proposed by the CEBM in 2009 (Table 3), which is often employed for this purpose. The classification is based on the study design, but the quality of the study and the outcomes are also considered. The classification of a given study is generally based on a reading of the title and abstract. However, when

Table 1. Search strategy employed to locate articles in the two databases.[a]

PubMed	(‘‘mandibular dislocation’’ OR ‘‘recurrent mandibular dislocation’’ OR ‘‘recurrent temporomandibular joint dislocation’’ OR ‘‘recurrent TMJ dislocation’’ OR ‘‘temporomandibular joint dislocation’’ OR ‘‘TMJ dislocation’’ OR ‘‘chronic mandibular dislocation’’ OR ‘‘chronic temporomandibular joint dislocation’’ OR ‘‘chronic TMJ dislocation’’ OR ‘‘chronic joint dislocation’’ OR ‘‘mandibular luxation’’ OR ‘‘temporomandibular joint luxation’’ OR ‘‘TMJ luxation’’) AND (‘‘open eminectomy’’ OR ‘‘TMJ eminoplasty’’ OR ‘‘augmentation of the articular eminence’’ OR ‘‘miniplate eminoplasty’’ OR ‘‘Dautrey’s procedure’’ OR ‘‘LeClerc procedure’’ OR ‘‘glenotemporal osteotomy’’ OR ‘‘capsular plication’’ OR capsulorrhaphy OR ‘‘bone plates’’[MeSH] OR ‘‘dislocations/surgery’’[MeSH] OR ‘‘Joint Instability/surgery’’[MeSH] OR ‘‘Temporomandibular Joint Disorders/surgery*’’[MeSH] OR ‘‘Oral Surgical Procedures*’’[MeSH] OR ‘‘Osteotomy/methods’’[MeSH] OR ‘‘Surgery, Oral/methods’’[MeSH] OR ‘‘Surgical Procedures, Operative/methods’’[MeSH] OR ‘‘Joint Capsule/surgery’’[MeSH]) AND (‘‘pain’’[MeSH] OR ‘‘myalgia’’[MeSH] OR ‘‘arthralgia’’[MeSH] OR ‘‘range of motion, articular’’[MeSH] OR ‘‘mouth opening’’ OR ‘‘interincisal distance’’ OR ‘‘mandibular movement’’ OR ‘‘protrusive movement’’ OR ‘‘chewing difficulty’’ OR recurrence[MeSH] OR relapse OR recidive OR ‘‘Treatment Failure’’[MeSH] OR ‘‘Treatment Outcome’’[MeSH] OR ‘‘facial paralysis’’[MeSH])
Web of Science	(‘‘mandibular dislocation’’ OR ‘‘recurrent mandibular dislocation’’ OR ‘‘recurrent temporomandibular joint dislocation’’ OR ‘‘recurrent TMJ dislocation’’ OR ‘‘temporomandibular joint dislocation’’ OR ‘‘TMJ dislocation’’ OR ‘‘chronic mandibular dislocation’’ OR ‘‘chronic temporomandibular joint dislocation’’ OR ‘‘chronic TMJ dislocation’’ OR ‘‘chronic joint dislocation’’ OR ‘‘mandibular luxation’’ OR ‘‘temporomandibular joint luxation’’ OR ‘‘TMJ luxation’’) AND (‘‘open eminectomy’’ OR ‘‘TMJ eminoplasty’’ OR ‘‘augmentation of the articular eminence’’ OR ‘‘miniplate eminoplasty’’ OR ‘‘Dautrey’s procedure’’ OR ‘‘LeClerc procedure’’ OR ‘‘glenotemporal osteotomy’’ OR ‘‘capsular plication’’ OR capsulorrhaphy OR ‘‘bone plates’’ OR ‘‘dislocations/surgery’’ OR ‘‘Joint Instability/surgery’’ OR ‘‘Temporomandibular Joint Disorders/surgery*’’ OR ‘‘Oral Surgical Procedures*’’ OR ‘‘Osteotomy/methods’’ OR ‘‘Surgery, Oral/methods’’ OR ‘‘Surgical Procedures, Operative/methods’’ OR ‘‘Joint Capsule/surgery’’) AND (pain OR myalgia OR arthralgia OR ‘‘range of motion, articular’’ OR ‘‘mouth opening’’ OR ‘‘interincisal distance’’ OR ‘‘mandibular movement’’ OR ‘‘protrusive movement’’ OR ‘‘chewing difficulty’’ OR recurrence OR relapse OR recidive OR ‘‘Treatment Failure’’ OR ‘‘Treatment Outcome’’ OR ‘‘facial paralysis’’)

[a] Key words used in the search for articles published between January 1, 1974 and August 31, 2014.

Table 2. Eligibility criteria employed in the present systematic review.

Inclusion criteria
Articles on open surgical treatment for recurrent mandibular dislocation
Publication between January 1, 1974 and August 31, 2014
Full texts available electronically
Article could be categorized into one of the five established levels/sublevels of scientific evidence
Exclusion criteria
Articles found not to address the topic under study after full-text analysis
Letters to the Editor/Editorial
Article published in any language other than English

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