

Surgical treatment, compared to conservative treatment, probably leads to less joint pain, malocclusion and lateral deviation in buccal opening in mandibular condyle fractures. But it is not clear if there are differences between surgical and conservative treatment in terms of the risk of facial paralysis, pseudoarthrosis or infection.

The Problem

The mandible is one of the most frequently fractured bony structures, with mandibular condyle fractures being the most recurrent. There are two definitive treatment options for mandibular condyle fractures: surgical and conservative. The surgical options are open reduction of the condyle fracture by miniplates and titanium screws, and intraosseous fixation wires. Conservative treatment consists of intermaxillary fixation for one to two weeks duration and temporal fixation elements. Generally, favor surgical treatment because it achieves a closer to normal anatomical reduction, a better recovery of joint function and adjacent soft tissues, among others. However, it is associated with an increased risk of neurological damage. On the other hand, conservative treatment avoids surgical intervention with acceptable results, due to the capacity of condylar remodeling and the masticatory system. But, it carries a higher risk of temporomandibular joint pain, pseudoarthrosis, facial asymmetry and malocclusion.

Methods

1. We conducted a search in Epistemonikos, which is maintained through searches in multiple sources of information, including MEDLINE, Embase, and Cochrane, among others.
2. We extracted the data from the identified reviews and analyzed it from the primary studies.
3. With this information, we generated a structured summary called FRISBEE (Friendly Summaries of Body of Evidence using Epistemonikos), following a pre-established format, which includes key messages, a summary of the evidence set (presented as a matrix of evidence in Epistemonikos), meta-analysis of the total of the studies when possible, a summary table of results with the GRADE method, and a section of other considerations for decision-making.

Conclusions

- Surgical treatment probably leads to less joint pain than conservative treatment in mandibular condyle fractures.
- Surgical treatment probably leads to less malocclusion than conservative treatment in mandibular condyle fractures.
- It is not clear if there are differences in the risk infection between surgical and conservative treatment.

Patient or healthcare consumer involvement

- Considering the evidence presented in this summary, most patients and clinicians should prefer surgical intervention. However, there might be variability in the decisions made by patients, especially those who prefer to avoid complications of surgical treatment.

Key Results

- Information on the effects of surgical compared to conservative treatment for mandibular condylar fractures is based on six randomized trials involving 288 patients.
- The risk ratio for pain in the temporomandibular joint was 0.31 (95% confidence interval (CI) 0.13 to 0.73) in favor of surgery. The risk ratio for malocclusion was 0,29 (95% CI 0.14 to 0,60) favoring surgery. The risk ratio for infection was 3.35 (95% confidence interval (CI) 0,16-78,56) favoring conservative treatment. The risk ratio for lateral deviation was 0.41 (95% confidence interval (CI) 0.23 to 0.71) in favor of surgery.


Surgical versus conservative treatment for mandibular condyle fractures				
Patients	Adults with mandibular condyle fractures			
Intervention	Surgical management			
Comparison	Conservative management			
Outcome	Absolute effect*		Relative effect (95% CI)	Certainty of evidence (GRADE)
	WITHOUT surgery	WITH surgery		
Difference: patients per 1000				
Pain in temporomandibular joint	309 per 1000	96 per 1000	RR 0.31 (0.13 to 0.73)	⊕⊕⊕○ ¹ Moderate
	Difference: 213 patients less (Margin of error: 83 less to 269 more)			
Malocclusion	225 per 1000	65 per 1000	RR 0.29 (0.14 to 0.60)	⊕⊕⊕○ ¹ Moderate
	Difference: 160 patients less (Margin of error: 90 to 194 less)			
Infection	1 per 1000	3 per 1000	RR 3.55 (0.16 to 78.56)	⊕○○○ ^{1,2} Very low
	Difference: 2 patients more (Margin of error: 1 less to 65 more)			
Lateral deviation in mouth opening	486 per 1000	199 per 1000	RR 0.41 (0.23 to 0.71)	⊕⊕⊕○ ¹ Moderate
	Difference: 287 patients less (Margin of error: 141 to 374 less)			
Facial paralysis	Not reported by the systematic reviews			--
Pseudoarthrosis	Not reported by the systematic reviews			--

Margin of error: 95% confidence interval (CI).
RR: Risk ratio.
GRADE: Evidence grades of the GRADE Working Group (see later).

*The risk **WITHOUT SURGERY** is based on the risk in the control group of the trials. The risk **WITH SURGERY** (and its margin of error) is calculated from relative effect (and its margin of error).

¹ The certainty of the evidence was downgraded in one level for risk of bias, because allocation was not concealed in the trials.
² The certainty of the evidence was downgraded in one level for imprecision, because decisions would vary substantially at the extremes of the confidence interval.

FRISBEE: Surgical versus conservative treatment for mandibular condyle fractures

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