

## LITERATURE REVIEW

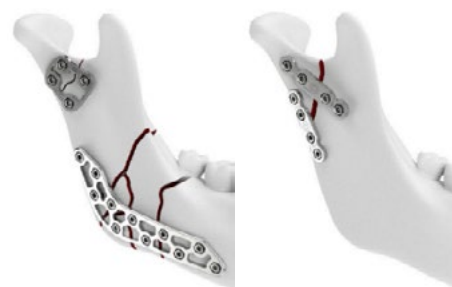
# Different approaches in ORIF-based treatment of multiple mandibular fractures with condylar neck involvement

## CLINICAL ISSUE

Multiple mandibular fractures involving the condylar process are a common finding. However, there is no consensus regarding the optimal sequence for open reduction and internal fixation (ORIF), whether “bottom-to-top” or “top-to-bottom”.

## MEDARTIS SOLUTION

- Anatomically designed TCP plates reduce risk of primary loss of reduction.
- Solid locking technology for the treatment of multi-fragment fractures (TriLock).
- Plate design allows correct repositioning of condylar head in the fossa as well as transmission of physiological strains across the fracture line during healing.



MODUS 2 Mandible TriLock Condyle Plates

## LITERATURE REVIEW

For this retrospective, monocentric study, the authors included 41 patients who were all treated with ORIF for multifocal mandibular fractures between 2012 and 2022. The aim was to compare the quality of surgical reposition using a “top-to-bottom” versus a “bottom-to-top” ORIF sequence. Secondary factors were surgeon’s expertise and surgery duration. Osteosynthesis of the condylar neck/base was performed with a trapezoid condylar plate (TCP) or two straight TriLock Condyle Plates from the MODUS 2 Mandible system by Medartis. 31 patients were in the “bottom-to-top” group (77% male, mean age 40.8 SD 16.5), and ten patients in the “top-to-bottom” group (80% male, mean age 37.3 SD 18.5).

- Sequence of the operation does not significantly affect the clinical outcome (optimal vs. suboptimal OR 4.80; CI: 0.53–236.07;  $p = 0.231$ ) or overall outcome ( $p = 0.119$ ,  $r = 0.246$ , CI: 0.04–0.43).
- All non-occlusal complications were transient and resolved over time (“bottom-to-top” group 8 complications in 6 patients (19%); “top-to-bottom” group 6 complications in 4 patients (40%).
- Surgery duration did not depend on the sequence or on surgeon experience. However, the duration was longer for patients with a suboptimal outcome than for patients with an optimal outcome ( $p = 0.01$ ,  $r = 0.406$ , CI: 0.11–0.63).

## KEY TAKEAWAY

The authors conclude that the “top-to-bottom” approach may be a favorable factor for achieving better outcomes. In addition, they had very good experiences with Medartis hardware: “We favor [the hardware] from Medartis because it is very well thought out, the screw heads are strong and do not easily strip, the thread engages the bone with superb efficacy, and the screws never break.”

## REFERENCES:

Bottini GB, Lauth W, Hitzl W, et al. Is There an “Ideal” Sequencing for Open Reduction and Internal Fixation of Multiple Mandibular Fractures with Condylar Neck Involvement? A Retrospective Cohort Study. *J Clin Med.* 2025;14(20):7142. Published 2025 Oct, 10. <https://doi.org/10.3390/jcm14207142> © 2025 Medartis AG

