

IS THERE A HIDDEN BLOOD LOSS IN ORTHOGNATHIC SURGERY AND SHOULD IT BE CONSIDERED?

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INTRODUCTION

Orthognathic surgery is routinely performed as an elective surgical intervention, which reinforces the necessity of high safety standards and a low rate of complications. Bleeding complications have clearly been shown to be a highly relevant factor in this regard¹.

The parameter 'hidden blood loss' (HBL) has already been established as a reliable adjunct in various surgical specialties, such as orthopaedic and spinal surgery². It is used to yield specific information on the amount of undetected blood loss, including the bleeding volume occurring after wound closure.

As of yet, 'hidden blood loss' related to orthognathic surgery has not been explored or quantified in the literature.

OBJECTIVE

The aim of this prospective observational study was to investigate the parameter 'hidden blood loss' (HBL) in the context of orthognathic surgery, incorporating undetected bleeding volumes occurring intra- and postoperatively.

MATERIAL AND METHODS

Blood loss was recorded at **three** different time points.

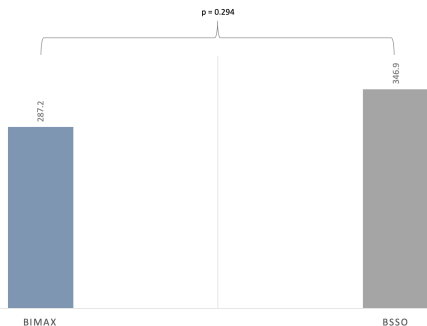
At the end of the operation the visible intraoperative blood loss (VBL) was measured. Additionally, the perioperative blood loss was calculated 24 hours and 48 hours postoperatively using the 'haemoglobin balance method'.

Analysis of the **HBL** was based on the difference between the visible intraoperative blood loss (**VBL**) and calculated blood loss (**CBL**), determined 48 hours after surgery.

CONCLUSION

HBL is a valuable adjunct to record within the perioperative management of orthognathic surgery to further improve patient safety and postoperative outcomes.

HIDDEN BLOOD LOSS (ML)



RESULTS

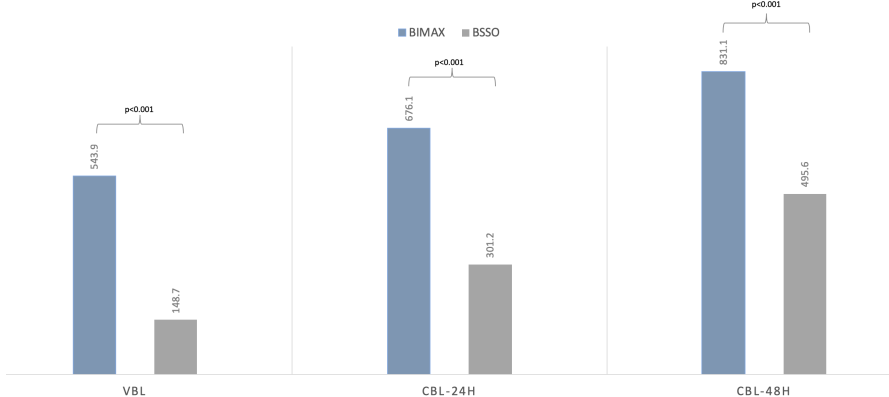
82 patients (male 33, female 49) were included in this study, of whom 41 underwent bimaxillary surgery and of whom 41 underwent Bilateral Sagittal Split Osteotomy (BSSO).

Statistically significant differences with reference to the absolute bleeding volumes were found when comparing the two treatment modalities.

In terms of HBL, a bleeding volume of **287.2ml** (± 265.9) in the bimaxillary group and 346.9ml (± 271.3) in the BSSO cohort was recorded.

This accounted for **32.2%** (bimaxillary surgery) and **62.6%** (BSSO) of the CBL after 48 hours (BIMAX vs. BSSO, $p < 0.001$).

ESTIMATED BLOOD LOSS (ML)



References

- 1 Khanna S, Dagum AB. A critical review of the literature and an evidence-based approach for life-threatening hemorrhage in maxillofacial surgery. *Ann Plast Surg* 2012; 69: 474-478.
- 2 Ogura Y, Dimar JR, Gum JL, Crawford CH, 3rd, Djurasovic M, Glassman SD, Carreon LY: Hidden Blood Loss following 2- to 3- level Posterior Lumbar Fusion. *Spine J* 2019; 19:2003-2006.

Conflict of Interest Statement

The author has no conflicts of interest to declare.