

METOPIC SYNOSTOSIS- SURGICAL RESULTS AND PERINATAL ASPECTS

Akademisk avhandling

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av

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Avhandlingen baseras på följande arbeten:

- I. **Bhatti-Søfteland M**, Maltese G, Tarnow P, Wikberg E, Bernhardt P, Kölby L, *The Degree of Surgical Frontal Volume Correction in Metopic Synostosis Determines Long-Term Outcomes*, Journal of Craniofacial Surgery: Volume 28, Issue 5, July 2017
- II. **Bhatti-Søfteland M**, Maltese G, Tarnow P, Hagmarker L, Wikberg E, Bernhardt P, Kölby L, *Temporal Deformity Objectively Measured Before and After Surgery for Metopic Synostosis: Retrusion Rather than Hollowing*, Journal of Craniofacial Surgery, Volume 28, Issue 7, October 2017
- III. Paganini A*, **Bhatti-Søfteland M***, Fischer S, Kölby D, Hansson E, O'Hara J, Maltese G, Tarnow P, Kölby L, *In search of a single standardised system for reporting complications in craniofacial surgery: A comparison of three different classifications*, Journal of Plastic Surgery and Hand Surgery, Volume 53, Issue 6, June 2019.* Shared first authorship
- IV. Cornelissen MJ, **Søfteland M**, Apon I, Ladfors L, Mathijssen IMJ, CohenOverbeek TE, Bonsel GJ, Kölby L, *Perinatal complications in patients with unisutural craniosynostosis: An international multicentre retrospective cohort study*, Journal of Cranio-Maxillofacial Surgery, Volume 45, Issue 11, Nov 2017
- V. **Bhatti-Søfteland M**, Ladfors L, Tarnow P, Maltese G, Kölby L, *Evaluating etiological risk factors for craniosynostosis; parental age, IVF, plurality and fetal constraint*, Manuscript

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Abstract

Metopic synostosis (MS) is the second most common type of craniosynostosis (CS). This thesis aimed to evaluate surgical results in children operated for MS, their perinatal outcomes and potential etiological risk factors.

Methods: In study I, we measured the distribution of frontal and intracranial volume ratio at 6-months postoperatively to determine relapse. Study II measured the degree of bony temporal hollowing before and after surgery. Study III assessed three grading scales for complication reporting in craniofacial surgery. Studies IV and V used data from the Swedish Birth Register to study perinatal outcomes in collaboration with the Netherlands (study IV) and evaluate aetiological factors in CS (study V).

Results: Study I found no significant differences in volume ratios between spring removal and the 3-year follow-up. Study II revealed that surgery reduced temporal deformity. Study III identified complication rates as follows: Clavien–Dindo, 7.2%; Leeds, 13.1%; Oxford, 8.1%. Study IV found higher Caesarean section rates in children born with MS and sagittal synostosis (SS). MS was associated with higher rates of assisted reproductive technology (ART), breech, and pre-term birth. Study V revealed maternal age, male sex, and breech as independent risk factors for CS, whereas male sex, twins, and conception by ART were risk factors for MS.

Conclusions: Relapse is not the cause of low frontal volume ratio, surgery eradicates two-thirds of temporal deformity, Oxford grading is suitable for reporting complications in CF surgery, SS and MS children are at risk of higher rates of Caesarean sections, and we identified ART, twins and male sex as independent risk factors for MS.

Keywords: metopic synostosis, craniosynostosis, temporal hollowing, ART, perinatal outcomes, complications.



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