Renier's H technique

- Biparietal remodelling and total vault remodelling in scaphocephaly-a comparative study using 3d stereophotogrammetry
- Does Coronal Suturectomies and Occipital Barrel Staves Make a Difference in Early Reconstruction for Sagittal Craniosynostosis?
- The Craniosynostosis Puzzle: New Simulation Model for Neurosurgical Training
- Development and evaluation of a new pediatric mixed-reality model for neurosurgical training
- Impact of extra-axial cerebrospinal fluid collection in frontal morphology after surgical treatment of scaphocephaly
- Triple square extended osteotomies for treatment of scaphocephaly (Renier's "H" technique modification)
- Scaphocephaly and cranial vault reconstruction: Renier's 'H' technique
- Scaphocephaly correction with retrocoronal and prelambdoid craniotomies (Renier's "H" technique)

The study aimed to compare the results of two surgical techniques for the treatment of isolated sagittal synostosis (ISS) using 3D stereophotogrammetry. One technique, Renier's H technique (RHT) comprised a biparietal expansion, and the other, the total vault remodeling (TVR) included also frontal remodeling.

The two groups of operated children were compared with a third control group of normocephalic children. The 3D scanning was performed on all children between 12 and 245 months of age. On each 3D image six measurements and indices have been made, to evaluate not only the length and width of the head but also the height. The cranial index (CI) was measured in a plane parallel to the nasion-tragus plane, at the intersection with the opisthocranion.

Each of the three groups (RHT, TVR, control group) included 28 children. The measurements that were influenced by the correction of the frontal bossing, namely the CI and the sagittal length, were closer to normocephaly after TVR than after RHT. Lesser or no statistical difference was documented in the measurements evaluating the biparietal aspect and the height of the vertex, indicating that the biparietal expansion is effective in both procedures.

Based on the results TVR results in a better esthetical outcome, particularly about the direct surgical remodeling of the frontal bossing [1)]

1)
Spazzapan P, Verdenik M, Velnar T. Biparietal remodelling and total vault remodelling in scaphocephaly-a comparative study using 3d stereophotogrammetry. Childs Nerv Syst. 2024 Feb;40(2):517-526. doi: 10.1007/s00381-023-06115-8. Epub 2023 Aug 22. PMID: 37606834; PMCID: PMC10837263.

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