

SAND DOLLAR AND STAVES TECHNIQUE FOR TREATMENT OF UNILATERAL LAMBDOID CRANIOSYNOSTOSIS: A COMPARATIVE PILOT STUDY

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Background: Switch cranioplasty (SC) is the gold standard technique for treating unilateral lambdoid craniosynostosis (ULS); however, postoperative results often leave much to be desired. The Sand-Dollar and Staves technique (SDS) is a novel technique that employs virtual surgical planning to correct parietal bossing following suturectomy. The purpose of this pilot study is to compare operative metrics and aesthetic outcomes in patients with ULS treated with SC and SDS.

Materials/Methods: Retrospective chart review was performed to identify patients with ULS who were treated with SC and SDS at our institution. Patient clinical data along with operative metrics for their procedure were collected. Pre- and postoperative photographs were distributed to two panels of reviewers (one consisting of surgeons and one consisting of non-surgeons) to grade the aesthetic outcomes.

Results: A total of 13 patients (5 with SC, 8 with SDS) were included in our study. When comparing SC to SDS, we observed no differences in median operative length and postoperative length of stay. A statistically significant reduction in the number of patients that required transfusion during SDS when compared to SC was observed (38% and 100%, $p=0.02$). Twelve patients had postoperative images with 10 having both pre- and postoperative images. Only 24% and 19% of respondents reported that patients had normal head shape following SDS and SC, respectively. Interestingly, 42% and 15% of respondents reported that patients treated with SC and SDS had a very abnormal head shape following surgery, respectively. When comparing pre- and postoperative images, 58% and 53% of responses stated that patients treated with SDS and SC had moderate-to-significant improvement of their cranial morphology after surgery.

Conclusions: Our findings suggest that SDS is a safe and effective method for treating patients with ULS. Further studies with larger sample sizes and reviewer panels are warranted to provide conclusive data regarding the efficacy of SDS.

Images / Graph / Table

