

The Impact of Health Disparities on Treatment for Single Suture Craniosynostosis in an Era of Multi-Modal Care

Presenter: Alyssa B. Valenti, MD

Co-Authors: Caitlin Hoffman, MD, Department of Neurosurgery, New York Presbyterian Hospital, New York, NY; Eseosa Odigie, BS, Weill Cornell Medical College, New York, NY; Kwanza Warren, MD, Department of Surgery, New York Presbyterian Hospital, New York, NY; Ishani D. Premaratne, BA, Division of Plastic Surgery, Weill Cornell Medicine, New York, NY; Thomas Imahiyerobo, MD, Division of Plastic Surgery, Columbia University Medical Center, New York, NY

Affiliation: Plastic and Reconstructive Surgery, NewYork-Presbyterian - Weill Cornell, New York, NY

BACKGROUND

Craniosynostosis is the premature fusion of the skull. There are two forms of treatment- open surgery and minimally invasive endoscopic assisted suturectomy. Candidates for endoscopic treatment are less than 6 months. The techniques are equally effective, however endoscopic surgery is associated with less blood loss, minimal tissue disruption, shorter operative time, and shorter hospitalization. This study aims to evaluate the impact of race/ethnicity and insurance status on age of presentation/surgery in children with craniosynostosis to highlight potential disparities in health care access.

METHODS

Charts were reviewed for children with craniosynostosis at two tertiary care NYC hospitals from January 1, 2014- August 2020. Clinical and demographic data were collected including variables pertaining to family socioeconomic status (SES), home address/zip code, insurance status (no insurance, Medicaid, private), race/ethnicity, age and date of presentation for initial consultation, type of surgery performed, and details of hospitalization. Children with unknown race/ethnicity and those with syndromic craniosynostosis were excluded. The data were analyzed via T-tests and Chi Square tests for statistical significance ($p < 0.05$).

RESULTS

121 children were identified. 62 surgeries were performed open and 59 endoscopically. The average age of initial presentation of the cohort was 6.68 months and 8.45 months on day of surgery. Age at presentation for the open surgery cohort compared to the endoscopic cohort achieved statistical significance at 11.33 months (SD 12.41) for the open cohort and 1.86 months (SD 1.1473) for the endoscopic cohort ($P < 0.0001$). Age on day of surgery for the open cohort v endoscopic cohort demonstrated statistical significance at 14.19 months (SD 15.05) for open surgery compared to 2.58 months (SD 1.030) for the endoscopic group. A statistically significant difference between the two groups was noted with regards to insurance status (no insurance, Medicaid, and private) ($p = 0.0044$); the open surgical group was comprised of more patients

without insurance and with Medicaid compared to the endoscopic group. The racial composition of the two groups reached statistical significance when comparing proportions of White, Hispanic, Asian, Black, and Other ($p=0.000815$) with significantly more Black and Hispanic patients treated in the open surgical group.

CONCLUSION

The results demonstrate a relationship between race and lack of insurance/Medicaid and type of surgery received; Black/ Hispanic children and children with Medicaid were more likely to present later and undergo open surgery.