Assessment of head shape by craniofacial surgeons: changing practice parameters as volume increases

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Abstract

Background: Since the initiation of the American Academy of Pediatrics' "Back to Sleep" campaign in 1992 the incidence of referrals for positional plagiocephaly has increased by 600%[1]. Therefore, the number of patients presenting to craniofacial providers with abnormal head shape has increased as well, up to 6-8 fold in some reports [2-4]. The increased volume of patients makes logistics of separating cases of craniosynostosis from positional plagiocephaly more challenging. We sought to determine how providers have structured practices to assess and treat the increased workload of head shape abnormality patients.

Materials and Methods: An electronic survey was created and distributed to members of the American Society of Maxillofacial Surgeons and the American Cleft Palate Association. Questions in the survey focused on who provides initial assessment of head shape abnormalities, means of evaluating these patients (quantitative measurement tools, imaging), organization of patients in clinic, clinic volume and treatment based information. Practices were categorized by head shape patient volume as low (<4 new patients/month), medium (5-20 new patients/month), and high (>21 new patients/month). A Pearson's Chi-square test was utilized to determine practice characteristics that differed significantly with practice volume.

Experience: The survey was distributed to 1322 craniofacial providers. Response rate was 6.6%, with 88 responses.

Results: Results are summarized in Table 1.

	Small Volume (n=22)	Moderate Volume (n=50)	Large Volume (n=14)	*p (2-tailed)*
Use of a portable laser scanner (%)	1 (4.5%)	3 (5.9%)	1 (6.7%)	0.959
Use of a stationary laser scanner (%)	1 (4.5%)	5 (9.8%)	5 (33.3%)	0.023*
Use of caliper anthropometrics (%)	6 (27.3%)	17 (33.3%)	7 (46.7%)	0.467
Use of a 2-D camera (%)	9 (40.9%)	13 (25.5%)	3 (20.0%)	0.297
Use of a 3-D camera (%)	0	5 (9.8%)	3 (20.0%)	0.111
Use of plain X-Ray films (%)	0	4 (7.8%)	4 (26.7%)	0.019*
Organization into a dedicated head shape clinic (%)	1 (4.5%)	23 (46.0%)	12 (80.0%)	<0.0005*
Organization into a multidisciplinary clinic (%)	4 (18.2%)	21 (42.0%)	8 (53.3%)	0.064
Utilizing a Nurse Practitioner or Physician Assistant as part of initial assessment (%)	4 (18.2%)	11 (22.0%)	8 (53.3%)	0.032*

Table 1: Characteristics of different volume practices: *p*-values with an asterix indicate characteristics that differ significantly as practice size increases.

Conclusions: As volume increases, practices are significantly more likely to utilize Nurse Practitioners or Physician Assistants, stationary laser scanners, and plain films, as well as organizing head shape abnormality patients into a dedicated clinic. Organization of these patients together allows for a streamlined pathway for

multiple providers involved in treatment, maximizing efficiency for providers as well as minimizing appointments for patients. These findings may help craniofacial practitioners to better organize their clinic so that personnel with adequate training can screen patients appropriately, thereby providing high quality care without providing an unnecessary time constraint on the surgeon.

References:

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Disclosure

None of the authors have any disclosures.