



Morbidity of Thyroglossal Duct Cyst Excision in Children Under Two Years: Analysis of NSQIP 30-Day Outcomes

Christopher Pool MD, Shivani Shah MD, Michele Carr MD DDS Med PhD FRCSC

Division of Otolaryngology – Head and Neck Surgery

Penn State Milton S Hershey Medical Center

Introduction

Thyroglossal duct cysts (TGDC) are the most common malformations in the neck and account for 70% of congenital cervical abnormalities.¹ Parents of children with congenital anomalies can be quick to jump to surgery. We investigated the benefit of having surgery before the age of two versus having surgery after.

Materials and Methods

Data pooled from the 2014-2015 NSQIP-P (50 Institutions) was used to identify all pediatric patients (<18 yo) who underwent TGDC removal (CPT code 60280). Demographic information was collected and patients were categorized by age (<2yr and >2yr). Outcomes measured included 30-day morbidity, readmission, and reoperation. Event rates were determined and compared with non-parametric statistics and multivariate logistic regression.

	Children Less than 2 Years at Surgery % (N)	Children Older than 2 years at Surgery % (N)	p value
Female Gender	45.2 (56)	48.2 (358)	0.389
Asthma	3.2 (4)	5.8 (43)	0.291
Bleeding Disorder	0.0 (0)	0.5 (5)	0.893
Congenital Malformation	3.2 (4)	2.2 (16)	0.542
ASA Class > 2	3.2 (3)	2.7 (24)	0.827
Operative Time	78 min (95% CI 66.4 – 91.1)	76 min (95% CI 72.9 – 80.6)	0.168

	Children Less than 2 Years at Surgery % (N)	Children Older than 2 Years at Surgery % (N)	p value
Superficial Surgical Site Infection	0.8 (1)	1.6 (12)	0.470
Dehiscence	0 (0)	0.5 (4)	0.671
Readmission	2.4 (3)	2.0 (15)	0.733
Reoperation	3.2 (4)	2.0 (15)	0.335
Post-operative Length of Stay	1.07 days	0.97 days	0.857

Results

867 cases of pediatric Sistrunk procedure were reported via NSQIP of which 124 (14.3%) were under the age of two at the time of operation. 47.8% were female. There was no significant difference ($p > 0.05$) in ASA classification, asthma, bleeding disorders, gender, or operative time between patients older than 2 years and those younger than 2. Superficial surgical site infection was the most common complication (1.5%). 18 patients (2.1%) required readmission and 19 (2.2%) required reoperation for related reasons. No difference was noted between the age groups with regard to superficial wound infection, reoperations, readmissions, or post-operative length of stay.

Discussion

Laboratory work has confirmed that general anesthetics cause increased neuronal apoptosis and changes in the morphology of dendritic spines in the developing brains of animals.² There is some evidence that rodents exposed to anesthesia during infancy have delayed neurobehavioral development.³ Studies involving prolonged anesthetic use in young children undergoing major surgery and those in the intensive care unit are confounded by the patients' pre-existing comorbidities and circumstances.^{4,5} In short, studies to date can neither confirm nor rule out the role of anesthesia in developmental delay following surgery at a young age.

While the risk of anesthesia in the pediatric population is unclear, we have shown that there is no surgical disadvantage to having TGDC removal later in childhood. There is concern for cyst infection, but if this is happening frequently, its effects are not pronounced at the time of surgery. As an elective procedure, the otolaryngologist can recommend deferring the procedure until children are older to parents who are anxious or eager.

References

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Conclusion

Although the timing of TGDC removal remains controversial, waiting to remove TGDC until patients are older than 2 year of age appears to be safe, with complication, reoperation, and readmission rates similar to children less than 2 years of age.