



Performing Minor Urologic Procedures in a Pediatric Sedation Center May be Safe and Cost-Effective: A Pilot Study

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BACKGROUND

Minor urologic procedures (MUPs) are often performed in an operating room (OR), even though they do not require a sterile environment nor general anesthesia (GA). Small studies (Smith 2004, Ben-Meir 2011) have shown successful outcomes performing meatotomy with local anesthetic with or without minimal sedation. Because of the increasing demand on time in the OR, we sought to pilot use of the pediatric sedation center (PSC) as an alternative to the OR for all MUPs. The objective of this pilot study is to describe our experience with MUPs performed under sedation at a freestanding PSC.

METHODS

A multidisciplinary team of representatives from pediatric urology, sedation, and anesthesia convened in 2019 to develop a pilot program to transition all MUPs from the OR to the PSC. MUPs were deemed good candidates to transition if they were minimally-invasive, of short duration, and without need for complex instrumentation. The sedation team and the urology team completed "go and sees" to the OR and the PSC to inform how these procedures may be accomplished in an alternative setting. A retrospective case review was completed to evaluate patient demographics, type and outcome of procedure, serious sedation-related adverse events, and sedatives used in the PSC. Family satisfaction scores were solicited by phone surveys following the procedure. Pre-implementation data was gathered from MUPs occurring in the OR to compare length of stay and cost with those performed in the PSC.

Brief surgical procedures that had previously been performed in the operating room may be completed safely in the Pediatric Sedation Center. Procedures performed in the sedation clinic were more time- and cost-efficient than historical controls.

CONCLUSIONS

All of the MUPs performed in 2019-2021 in the PSC were successful using a variety of sedation agents, no sedation resulted in a serious adverse event, and each procedure performed in the PSC instead of the OR resulted in savings in time and money. The PSC may be a safe and cost-effective alternative to the OR for performing MUPs. Families have reported high satisfaction scores for MUPs performed in this setting. Ongoing work is focused on identifying other minor surgical procedures performed in the OR that might be accomplished in the PSC.

ADDITIONAL KEY INFORMATION

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References:

Ben-Meir D, Livne P, Feigin E, Djerassi R, Efrat R. Meatotomy using local anesthesia and sedation or general anesthesia with or without penile block in children: a prospective randomized study. J Urol. 2011 Feb; 185(2): 654-657.

Smith D, Gjellum M. The Efficacy of LMX versus EMLA for pain relief in boys undergoing office meatotomy. J Urol. 2004 Oct;172(4 Pt 2):1760-1.

RESULTS

Table 1: Description of minor urology procedures. Patients ranged widely in age and received a variety of sedation agents, but no procedure was complicated by a serious sedation adverse event, and all procedures were successfully completed.

Number of procedures	71
Average patient age, years (range)	6.4 (0.5 - 17.2)
Serious adverse events during sedation, n (%)	0 (0%)
Aborted procedures, n (%)	0 (0%)
Number of patients receiving propofol + analgesic, n (%)	58 (82%)
Number of patients receiving regional block, n (%)	19 (27%)

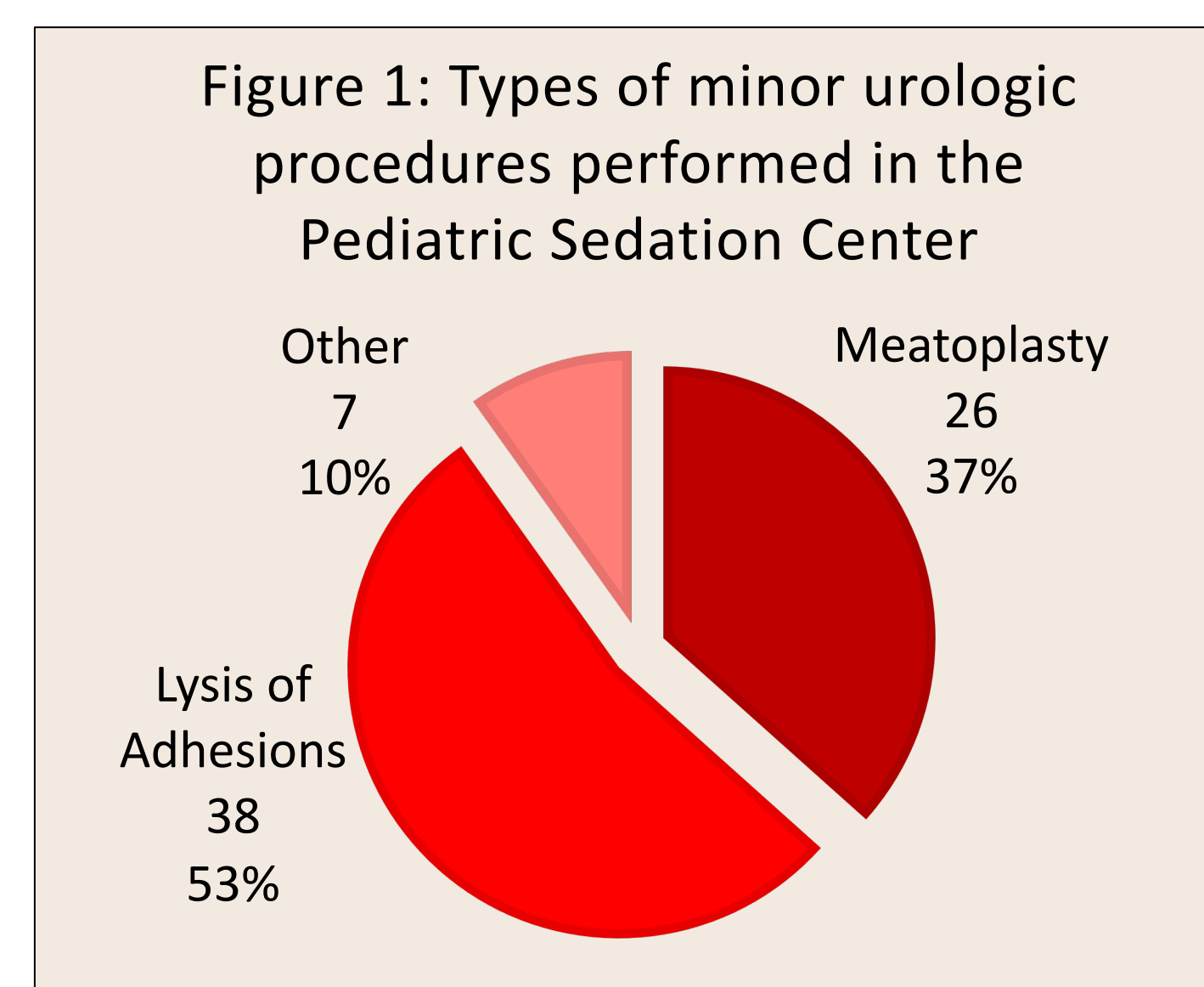
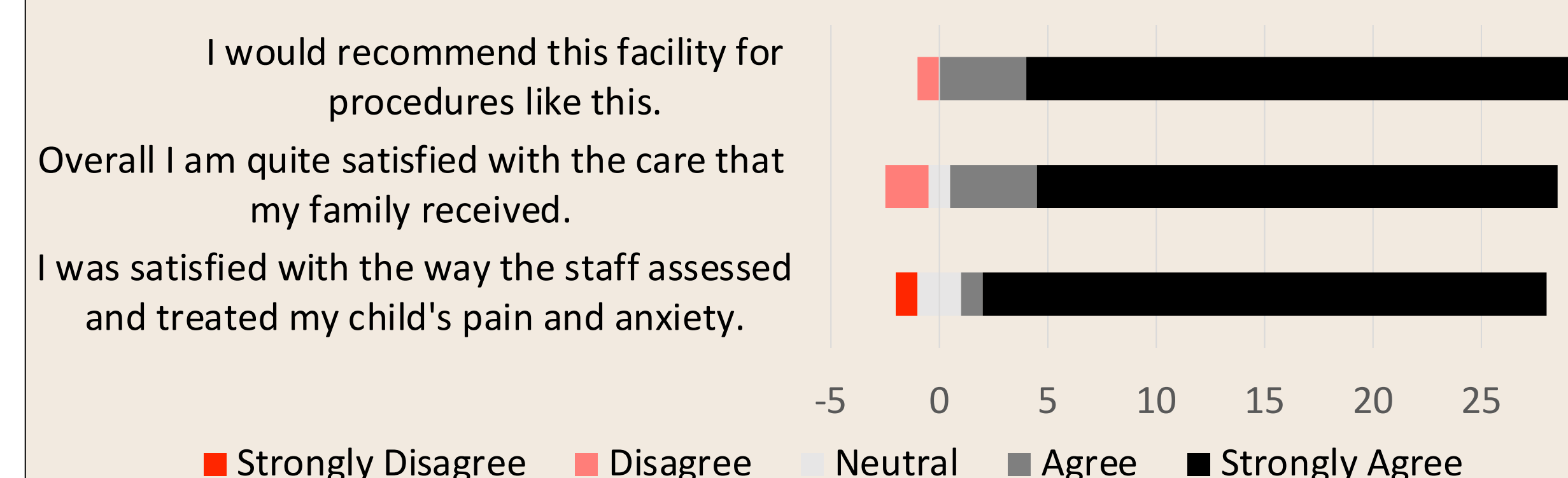


Table 2: Comparison of Pediatric Sedation Center efficiency versus historical controls occurring in the operating room. Procedures occurring in the sedation center were shorter in duration and also completed with less cost than those in the operating room.

	OR	PSC
Length of stay (hours)	3.9	3.3
Average Total Cost (dollars)		
Meatoplasty	\$2,279	\$1,450
Adhesiolysis	\$2,744	\$1,450

Figure 2: Results of Parent Satisfaction Survey. Thirty-one (44%) of parents responded to the phone survey. Parents overwhelmingly were satisfied with the care their child received, and would be likely to recommend the sedation center to others.



Cost savings
Meatoplasty – 36%
Adhesiolysis – 47%