Non-Intubated Laparoscopy in the Pediatric Urologic Patient

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Introduction: Simple and brief laparoscopic procedures have been performed safely over the years in the adult population using alternative airway devices. [1] In the pediatric population, laparoscopy may be utilized for such common procedures as abdominal exploration for undescended testis, as well as the evaluation of the contralateral ring during inguinal herniorraphy. Due to the pneumoperitoneum, these patients routinely received general anesthesia with endotracheal intubation for fear of regurgitation and post-operative aspiration. In this study, we have undertaken to test our hypothesis that routine short-term diagnostic laparoscopy can be performed safely without tracheal intubation in the pediatric population.

Methods: After Institutional Review Board approval, 63 pediatric urologic patient charts were retrospectively reviewed from the calendar year 2001-2002. All of these patients had diagnostic laparoscopic procedures with pneumoperitoneum times lasting less than 5 minutes. These charts were reviewed to determine the type and length of procedure, age and weight of the patient, anesthetic modality, and any anesthetic complications.

Results: 63 patients underwent diagnostic laparoscopic procedures under general anesthesia in conjunction with inguinal herniorraphy, orcheopexy, or orchiectomy from January 2001 to December 2002. 24 patients received endotracheal intubation, 15 patients received laryngeal mask airways, and 24 patients received mask ventilation for airway maintenance during general anesthesia. In the 39 non-endotracheal intubated patients, there were no conversions to a secure airway device. In all of the patients, there were no instances of intra-op regurgitation, intra/post-op aspiration or cardiorespiratory complications. All patients were discharged from the hospital on the same day.

Device	Age (Years)	Age (Range) years	Weight (Kg)	Weight (Range in Kg)	Surgical Time (minutes)	Surgical Range (minutes)
24 ETT	307 +/- 209	0.08-11	14.4 +/- 10.4	2.8-53.6	33.6+/- 14.5	5-60
15 LMA	7.5+/- 4.2	1-15	27.7+/- 14.8	10+/-59.0	31.2+/-20.1	5-62
24 Mask	6.5+/- 4.7	2-21	23.6+/- 14.4	11.4-75.0	30.4+/- 9.0	5-45

Discussion: The use of laryngeal mask airways or mask ventilation for airway maintenance during short-term laparoscopic urologic procedures under general anesthesia in the pediatric patient population is a suitable and safe alternative to endotracheal intubation.

References:

1. Swann D, Spens H, Edwards S, et al: Anaesthesia for gynaecological laparoscopy-a comparison between the laryngeal mask airway and tracheal intubation. Anaesthesia 48:431, 1993.