

LAPAROSCOPIC TREATMENT FOR HYDROCELE OF THE CORD OR SCROTUM

Hiroo Takehara MD, Hiroki Ishibashi MD, Masaki Ohshita MD and Seiki Tashiro MD, Department of Digestive and Pediatric Surgery, University of Tokushima, School of Medicine, Tokushima, Japan

Hydrocele of the cord or scrotum is a common condition in infancy that usually presents at birth. In most children with hydrocele, the processus vaginalis closes and the hydrocele resolves during the first 12-18 months of life. The recommended management of hydrocele is therefore to observe the patient without surgery for the first 2 years of life. We have performed 248 laparoscopic percutaneous extraperitoneal closure (LPEC) procedures in 200 children with inguinal hernia, including 13 with hydrocele. Of these 13 patients, 6 (2-5 years of age) had communicating hydrocele, 4 (1-5 years of age) had noncommunicating hydrocele associated with inguinal hernia, and the remaining 3 (1 year of age) had noncommunicating hydrocele of the scrotum associated with a contralateral patent processus vaginalis. The laparoscopic correction of hydrocele involves high-circuit suturing of the processus vaginalis, as in LPEC for inguinal hernia. The distal part of the hydrocele is left open via the internal inguinal ring or a small incision in the scrotum. No occurrence or recurrence of hydrocele was observed in the 248 LPEC procedures in our series. The advantages of this procedure are not only cosmetic and minimally invasive closure, but also a lower risk of injury to the spermatic duct or vessels and complete closure of the communication between the peritoneal cavity and the hydrocele to a greater or lesser degree.

DEDICATED INTELLIGENT OPERATING ROOMS FOR CHILDREN

Joselito G. Tantoco MD, Mark Burke MD, Drew Balcombe BS, Celeste Hollands MD, Guy F. Brisseau MD, Michael G. Caty MD, Philip L. Glick MD., Department of Pediatric Surgical Services, The Children's Hospital of Buffalo, and The Miniature Access Surgery Teaching, Training, Robotic, and Research Center, State University of New York at Buffalo, Buffalo, New York, USA

Introduction. The most recent advance in Miniature Access technology is the Dedicated Intelligent Operating Room (DIOR). To date, few centers have reported their experience with this new technology. In this study, we sought to describe our experience with the use of DIOR for Children and assess its impact in Miniature Access Surgery (MAS). Materials & Methods. We reviewed all MAS operations performed during the last 6 months of the traditional MAS room and the first 6 months of our newly acquired DIOR. 4 variables pertaining to the operation and OR efficiency were analyzed. A survey of the staff, focused on variables impacting user satisfaction, was also conducted. Results. The OR time and time between cases in the DIOR group decreased over time. The difference in the OR time was not statistically significant. The decrease in time between cases in the DIOR group was statistically significant ($p < .05$). User satisfaction, image quality, documentation, and 2-way interactive features ranked high in the survey in favor of the DIOR. Conclusion. The use of Dedicated Intelligent Operating Rooms for Children improved the operating room efficiency. Like MAS, there is a learning curve in using this technology. Hence, further improvement in OR efficiency is expected as we advance in this learning curve. End user satisfaction, better image quality, easy documentation, and 2-way interactive features are additional justification for the adoption of this new technology.

INTERNET BASED TELEMEDICINE IN PEDIATRIC SURGERY

Joselito G. Tantoco MD, Sle Rupisan MD, Beda Espineda MD, Bayani Tecson MD, Celeste Hollands MD, Guy F. Brisseau MD, Michael G. Caty MD, Philip L. Glick MD., Department of Pediatric Surgical Services, Children's Hospital of Buffalo, Miniature Access Surgery Teaching, Training, Robotic, and Research Center, SUNY at Buffalo, New York, USA, And The Philippine Children's Medical Center, Quezon City, Philippines

Introduction. The Internet is a medium that has fundamentally changed the way patient information is exchanged among health care providers. Use of this technology in the field of pediatric surgery will not only facilitate access to a pediatric surgeon but also make the process of pediatric surgical consultation convenient to both pediatric surgeon and the referring physician. In this study, we hypothesized that pediatric surgical evaluation, diagnosis, and planning of treatment is feasible using Internet based telemedicine.

Materials & Methods. This is a collaboration between two pediatric centers on opposite sides of the globe. The interaction is between a surgical trainee in the Philippines and a pediatric surgeon in Buffalo, New York. Consults were achieved through the use of Desktop PCs with Internet access and digital still camera. Patient data, diagnosis, and plan were exchanged using electronic mail with attachments and instant messaging.

Results. A total of 25 children with varied surgical problems, from congenital anomalies to tumors, were referred. Accurate diagnosis and appropriate treatment plans were made on all cases.

Conclusion. Pediatric surgical evaluation, diagnosis, and planning of treatment are feasible using internet based telemedicine. The protocol is easy to learn and allows accurate diagnosis of a wide spectrum of pediatric surgical conditions.

USE OF ENERGY DEVICES IN THORACOSCOPY: QUANTIFICATION OF LUNG SEALING CAPACITY

Michael V. Tirabassi MD, Gregory T. Banever, MD, David B. Tashjian, MD, Kevin P. Moriarty, MD, Division of Pediatric Surgery, Baystate Medical Center, Tufts University School of Medicine, Pioneer Valley Life Sciences Research Initiative, Springfield, MA, USA

PURPOSE: The goal of this study is to quantitate the ability of 5mm energy devices to seal lung tissue. Use of stapling devices in pediatric thoracoscopic surgery is limited due to the decreased maneuverability of 12mm instruments in the pediatric chest.

METHODS: Nine 10Kg female swine were divided between three non-survival groups. [Group A, n = 3] Left thoracotomy employing a 30mm stapler (US Surgical). [Group B, n = 3] Left thoracoscopy employing the Ligasure (Valley Lab) 5mm instrument. [Group C, n = 3] Left thoracoscopy employing the harmonic (Ethicon) 5mm instrument. Lung biopsies of the lingula were taken. At the end of the procedure seal burst pressures were recorded.

RESULTS: AVG Burst Pressure (mmHG); [A] Staples 43.5(43-44), [B] Ligasure 44.9(40.2-53.6), [C] Harmonic 37.5(30-46.4). AVG Seal Length (mm); [A] Staples 30(30-30), [B] Ligasure 27(21.4-30), [C] Harmonic 26(22-27). AVG Biopsy Weight (g); [A] Staples 0.52(0.51-0.53), [B] Ligasure 1.78(1.69-2.14), [C] Harmonic 1.58(0.3-1.66). The standard deviations for the pressures were; [A] Staples 0.5, [B] Ligasure 7.54, [C] Harmonic 8.29. There were no statistically significant differences between the burst pressures by T-Test (A vs. B $p = 0.78$, A vs. C $p = 0.33$). There was 80% power to detect a difference in the means of 25mmHG for the [A] Ligasure and 27mmHG for the [B] Harmonic.

CONCLUSION: In conclusion, both the ligasure and harmonic can effectively seal lung tissue from air-leaks in the non-survival swine model.