Our Experience of Laparoscopic Surgery in Children during the Learning Curve

Wani SA*, Mufti GN, Bhat NA, Baba AA, Khursheed S and Andrabí FH
Department of Paediatric Surgery, SKIMS, Soura, Srinagar, Jammu and Kashmir, India

Abstract

Aim: To address our experience of laparoscopic surgery in children during the learning curve.

Material and methods: This was a prospective analysis of patients who underwent various types of laparoscopic surgeries from January 2014 to August 2015. The different types of surgeries, operative time, conversion rate and complications were analyzed during this learning period.

Results: A total of 200 patients were operated and different types of lap procedures were performed, both basic and advanced. The majority of the laparoscopic surgeries were cholecystectomy 82 (41%), orchidectomy 31 (15.5%), orchidectomy 6 (3%), hydatid cyst liver 18 (9%), appendectomy 14 (7%), varicocelectomy 4 (2%), pyloromyotomy 3 (1.5%), ovarian tumour 7 (3.5%), lap assisted pullthrough 4 (2%), rectopy 3 (1.5%) Meckles diverticulocystectomy 6 (3%), spleenectomy 2 (1%), mesenteric cyst 4 (2%), diagnostic laparoscopy 9 (4.5%), omental cyst 1 (0.5%), duplication cyst 2 (1%), nephrectomy 1 (0.5%), leveling biopsy 2 (1%), deroofing of left renal cyst 1 (0.5%). During the early period of learning curve, operative time, conversion rate and complications were more which decrease with experience and learning skills. Conversions were for complicated appendicitis, hydatid cyst liver, spleenectomy and pyloromyotomy.

Conclusion: Laparoscopic surgery in children has lot of advantages, is very promising and technically demanding. Complications do occur during the learning curve. The more operative time and more conversion rate during the learning curve should not be regarded as complication. Postdoctoral residents of pediatric surgery should be trained so that pediatric lap becomes widely available with good results.

Keywords: Laparoscopy; Pediatric; Learning curve

Introduction

Laparoscopic surgery in children is not new. The interest in laparoscopic surgery in children remained confined to a few enthusiasts initially and rest of the pediatric surgical community adopted a wait and see attitude [1-3]. However with increasing experience in pediatric laparoscopic procedures and advances in instrumentation, laparoscopy has become accepted in the modern pediatric surgical armamentarium [4-6]. In USA about 82% of pediatric surgeons perform laparoscopic surgery [7]. At present most of the pediatric surgeons perform some form of laparoscopic surgery.

The laparoscopic surgery in children is increasing worldwide and the need for laparoscopic training has become essential in every teaching hospital. In this modern era it is very essential that every pediatric surgeon must have adequate training in laparoscopy. However, the learning curve in pediatric laparoscopy is long due to more complications and conversion rate during the learning curve. With the improvement in skill, the conversion rate and complications decrease with time during the learning curve. We present our experience of laparoscopic surgeries of 200 patients during the learning curve and discuss how the conversion, complications and operative time decrease with the time during the learning curve.

Methods

Patients up to the age of 16 years were operated laparoscopically by single surgeon having six months training in laparoscopy. Different surgical procedures were performed from January 2014 to August 2015. Pneumoperitonium was created by open method in all patients using carbon dioxide. The intra-abdominal pressure was maintained at 8 mmHg in infants and 10-12 mmHg in older children. The various types of surgeries, operative time, conversions and complications during the learning curve were analyzed.

Results

Different laparoscopic procedures were performed on 200 patients. The basic procedures were 149 (74.5%) and advanced procedures 51(25.5%) (Figure 1). The basic laparoscopic surgeries were cholecystectomy [82 (41%)], orchidectomy [31 (15.5%)], orchidectomy

*Corresponding author: Wani SA, SR, Department of Paediatric Surgery, SKIMS, Soura, Srinagar, Jammu and Kashmir, India, Tel: 9596310531; E-mail: ahmadsajadwani@gmail.com

Received December 18, 2015; Accepted February 10, 2016; Published February 20, 2016


Copyright: © 2016 Wani SA, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.
or vessel injury during trocar insertion, diathermy injury to gut, or CBD. In large centers, a complication rate of 1-2% has been reported in laparoscopic surgery in children [11]. The more operative time or conversion to open should not be regarded as a complication but more operative time or conversion to prevent the complication is very important and safe for the surgeon and to gain the confidence during the learning curve. In our patients, the operative time, conversion rate and complications were more during the early period of learning curve, which decrease with time, experience and learning skills. Now we are doing more advanced procedures with good results. The complications which occurred in our patients can be prevented by learning the lesson from such complications. The use of cetrimide in hydatid cyst should be used cautiously, be careful and vigilant during the removal of specimen and its contents, careful application of clips on testicular vessel during the lap orchidectomy or Stephen Fowler orchidopexy, use open method for the creation of pneumoperitonium. New trainee’s particularly postdoctoral trainees should be trained, so that in future laparoscopic surgery in children is widely and easily available with excellent results.

Conclusion

Laparoscopic surgery in children has lot of advantages and is very promising, but complications do occur during the learning curve. The more operative time or conversion to open should not be regarded as a complication; rather it is safe for the surgeon and to gain the confidence during the learning curve. Operative time, conversion rate and complications decrease with time, experience and learning skills. Postdoctoral residents of pediatric surgery should be well trained in pediatric laparoscopy, so that laparoscopic surgery in children becomes widely available with good results.

References