Research Paper

Volume : 5 | Issue : 1 | JANUARY 2016 • ISSN No 2277 - 8179

Evaluation of a Consultant's Surgical Approach to Laparoscopic Appendectomy.

Medical Science

KEYWORDS :

Dr.Astha Trivedi	Associate professor of surgery, VSGH.
Dr.Kamlesh Bhadreshwara	Associate professor of surgery,VSGH.
Dr.Paresh Desai	3rd year general surgery resident, VSGH.
Dr.Archan Khandekar	3rd year general surgery resident, VSGH

ABSTRACT

Since the advent of Laparoscopic surgery, laparoscopic appendectomy has challenged open appendectomy as the preferred surgical treatment for acute appendicitis1,2. With time, it has been used to treat more complicated cases of appendicitis to include its complications5. It has demonstrated superiority over the open approach in many areas like post operative wound infection, morbidity and cosmesis.

The technique of laparoscopic appendectomy has been modified several times in the past 20 years. In this report, a range of modifications regarding the position of ports placement and closure of the base of appendix as performed by surgeons working in a tertiary care teaching hospital in the city of Ahmedabad have been discussed. Surgeons performed laparoscopic appendectomy in a number of cases with these modifications during the 3-year period. Three ports were used by each of the surgeons included in the study. They had different sequences and sites of insertion of ports that they adhered to. The mode of access leading to optimal ergonomics as preferred by the surgeon has been discussed.

An analysis of the same has been done highlighting the preferences and the change in them due to circumstances as cited by the consultant Surgeons.

Introduction

Since the first introduction of laparoscopic appendectomy by Semm in 1987[1], this procedure has undergone a series of modifications. Two important issues in this procedure are that of port placement and control of the stump.

Laparoscopic appendectomy is usually done through three ports. In some circumstances, one or two puncture techniques have been performed, and occasionally the fourth port also became necessary. In the standard technique, the telescope is inserted through a peri-umbilical port after insertion of a 10 mm trocar. Then a 5 mm port is placed in left lower quadrant and a 5 mm port is placed in right lower quadrant. This configuration of port insertion has two drawbacks with respect to cosmesis and ergonomics.

First, the cosmetic result is not ideal. The other disadvantage is that it requires the operating surgeon to stand in an ergonomically unfavorable position with one arm crossed over the patient's body.

The standard technique for securing the base of the appendix is by double endoloop ligatures. However, application of endoloop requires dexterity and training. Another technique is application of endoscopic staplers. But this is a more expensive method for closure of the stump of the appendix, which is particularly important in developing countries.

In this report, we described the various techniques used by consultants regarding the configuration of ports and control of base of the appendix during laparoscopic appendectomy.

Materials and methods

We evaluated 30 consultants at two tertiary care teaching hospitals in the city via a questionnaire that asked them to list down their preferences with respect to the techniques used by them during the enlisted stages of the procedure.

The analysis made out of the same has been presented graphically with the data derived from it listed alongside.

Operative Technique

Every consultant has used his own preferred sequence of port insertions and subsequent closure of the base of appendix. The first 10 mm port is placed in periumbilical region. Introducing telescope and careful transillumination of skin enables to find a suitable position of two other ports. The second and the third ports are inserted in right iliac, right lumbar, left iliac and pubic region according to surgeon's preference.

For securing the base of appendix and ligation of mesoappendix , roeder/chromic/vicryl/silk is applied and tied. Base of appendix is ligated by applying a hand made ligature (with a Roeder knot) proximally and distally. We did not encounter any complications related to the use of roeder, such as bleeding or leakage from appendical stump.

Discussion

In practice, a wide variety of sequences of port placement have been seen[6]; offering several benefits. These modifications have not only shown to improve the cosmetic result but also provide optimal ergonomics. In our study the consultants have used the periumbilical port for telescope placement and this configuration provides good and safe surgical exposure for laparoscopic appendectomy. However, there are some important differences seen in their use of the type of telescope and subsequent locations of trocar insertions and the preferred range of intra-abdominal pressures. Selection of a suitable position with careful transillumination is necessary to prevent bleeding from abdominal wall vessels. Insertion of trocars in this place can be slightly difficult because the suprapubic peritoneum is flexible and typically results in tenting of the peritoneum before the trocar tip penetrates into the abdominal cavity. We routinely ask patient to empty the urinary bladder to prevent injury[7].

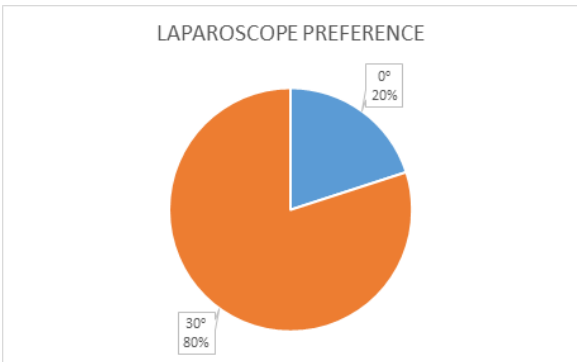
The consultants have had a good experience with application of Roeders[9] for securing the stump of appendix using chromic catgut sutures. The cost of Roeders is lower than endoscopic sta-

plers and endoloop ligatures. Moreover, its application is easy.

The analysis made out of the study has been presented graphically here.

Results

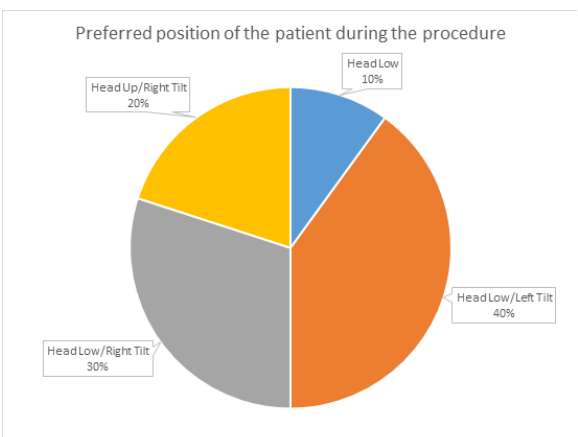
A fifth of the consultants preferred to use a 30^0 telescope, while the rest used a 0^0 scope.



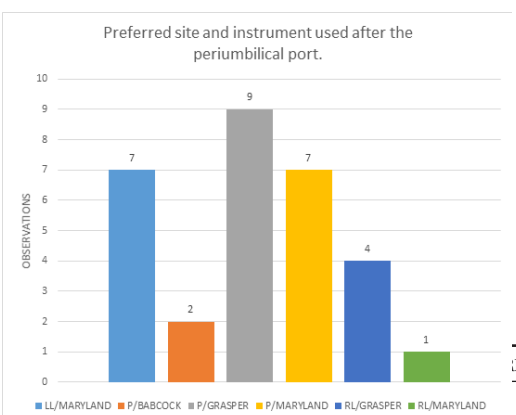
A majority of the consultants preferred the pressure of the pneumo-peritoneum to be in the range of above 10 mm of Hg.

The position of the patient after induction as preferred by the consultants has been listed in the following chart.

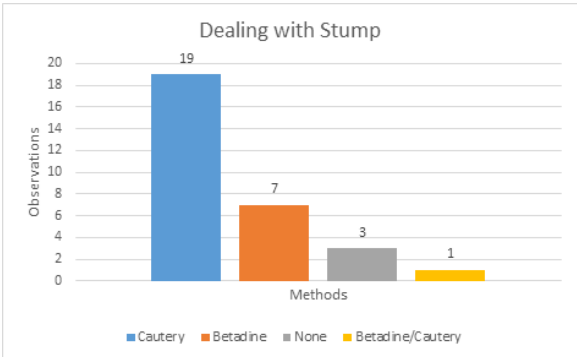
A position with the head low and the patient tilted towards the left was preferred by most consultants.



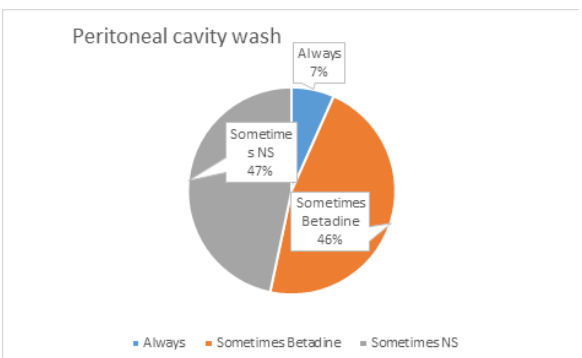
The site of the second port (following the periumbilical port that was unanimously chosen) had a wide range of options that were selected by the consultants as shown by the bar diagram below.



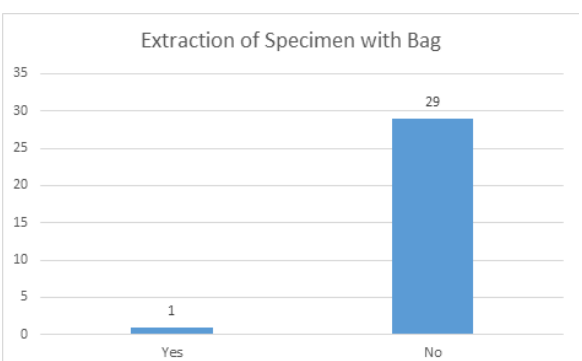
LL-Left Lumbar
P-Pelvic
RL-Right Lumbar

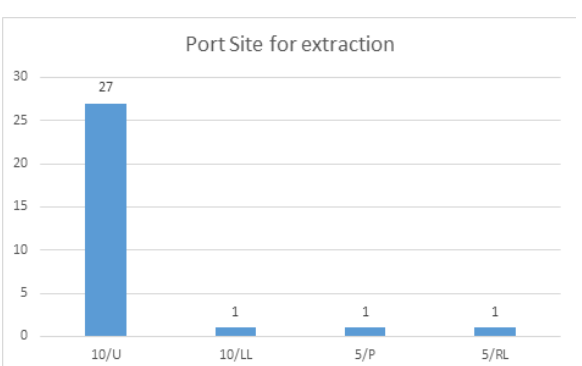


The stump was dealt with by a cautery on most occasions; a chemical agent was applied by a few.

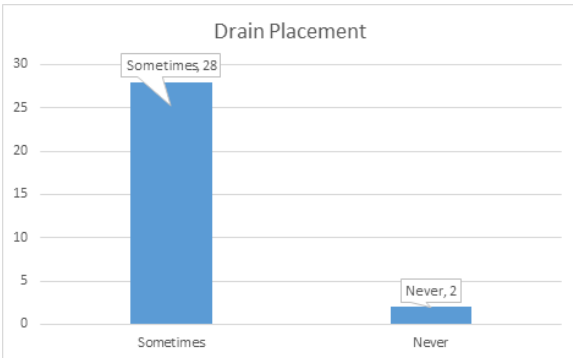


Most consultants gave a wash with normal saline or an antiseptic agent added to it.





Volume : 5 | Issue : 1 | JANUARY 2016 • ISSN No 2277 - 8179



Conclusion

According to our experiences and previous reports[11], the better ergonomics are achieved on an individual basis rather than adhering to a strict laid out guidelines. The feasibility of application, shorter time of operation and lower cost of Roeders (hand made loop) are advantages of this technique for ligation of appendiceal stump in comparison to the standard endoloop ligature[10]. A lesser post operative morbidity was observed after a wash was given in the opinion of the consultants[8] and it increased on insertion of a drain through one of the port sites.

Acknowledgements

We would like to thank the staff of the operating room of V.S. General Hospital and B.J.Medical College for their cooperation.

REFERENCE

1. Litynski GS. Kurt Semm and the fight against skepticism: Endoscopic hemostasis, laparoscopic appendectomy, and Semm's impact on the "laparoscopic revolution". JSLS 1998;2:309-13. 2. Nicholson T, Tiruchelvam V. Comparison of laparoscopic- assisted appendectomy with intracorporal laparoscopic appendectomy and open appendectomy. JSLS 2001;5: 47-51. 3. Kollmar O, Z̈graggen K, Schilling MK, Buchholz BM, Büchler MW. The suprapubic approach for laparoscopic appendectomy. Surg Endosc 2002;16:504-08. 4. Delibegović S, Matović E. Hem-o-lok plastic clips in securing of the base of the appendix during laparoscopic appendectomy. Surg Endosc May 14, 2009. 5. Hall J, Hodin R. Laparoscopic Appendectomy. Bland K, Büchler M, Csendes A, Sarr M, Garden OJ, Wong J, editors. Berlin/Heidelberg: Springer London; 2009;(SpringerReference_108992):1323–30. 6.Pier A, Götz F, Bacher C, Ibald R. Laparoscopic appendectomy. World J Surg. 1993 Jan;17(1):29–33. 7.Panzera F, Ghisio S, Grosso A, Vigezzi P, Vitale M, Cariaggi RM, et al. [Laparoscopic appendectomy. Retrospective analysis of our experience compared with the literature]. Minerva Chir. 2000 Sep;55(9):577–80. 8.Coccolini F, Trana C, Sartelli M, Catena F, Di Saverio S, Manfredi R, et al. Laparoscopic management of intra-abdominal infections: Systematic review of the literature. World J Gastrointest Surg. 2015 Aug;7(8):160–9. 9.Mayir B, Bilecik T, Ensari CO, Oruc MT. Laparoscopic appendectomy with hand-made loop. Wideochir Inne Tech Maloinwazyjne. 2014 Jun;9(2):152–6. 10.Mayir B, Ensari CO, Bilecik T, Aslaner A, Oruc MT. Methods for closure of appendix stump during laparoscopic appendectomy procedure. Ulus Cerrahi Derg. 2015;31(4):229–31. 11.Delibegovic S. Basic principles of laparoscopic appendectomy. Med Pregl. 2012 Sep;65(9-10):383–7.