ORIGINAL ARTICLE

A short experience of laparoscopic surgeries at district Battagram

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Received:
13th October 2016

Accepted:
15th December 2016

Abstract

Background: Laparoscopic surgery is a new advancement, replacing majority of the open surgical procedure now-a-days. We conducted this study to see the feasibility of minimally invasive approach at district level hospital.

Method: This study was conducted in a private setup at district Battagram from Dec 2015 to September 2016. A total of 52 patients with acute appendicitis and symptomatic gall stones were included. Laparoscopic appendicectomy and cholecystectomy were carried out. Patients were observed post operatively.

Results: A total of 52 patients, 7(13%) male and 45(87%) female were included in the study. The mean age of the patients was 27 years. Laparoscopic appendicectomy was carried out in 35(67%) while lap chole in 17(33%) patients. There were 7 males and 28 females in the laparoscopic appendicectomy group while there were 17 females with no male in the lap chole group. In the entire series, 5 patient of lap appendicectomy were converted to open. The conversion rate was 9.6%. No patient developed port site wound infection. Hospital stay was 48 hours on average. The patients were satisfied with the minimally invasive procedure.

Conclusion: laparoscopic surgery is a feasible option at district level and it should be encouraged.

Key words: Laparoscopic Cholecystectomy, Laparoscopic Appendicectomy, pneumoperitoneum

Introduction:

Cholecystectomy and appendicectomy are the most commonly performed elective and emergency operations respectively by the general surgeons. Initially performed by the open approach they have now largely been shifted to the minimally invasive technique. The advantages of laparoscopic over open surgery includes decreased wound related complications, better cosmetic result, less post-operative pain and decreased hospital stay. Open surgery is used as a rescue mean in case when the procedure cannot be completed safely via the laparoscopic approach, where laparoscopic facilities and skills are not available and on patient demand.[1,2]

We use four ports for laparoscopic cholecystectomy. Four and three ports are routinely used for laparoscopic cholecystectomy although some experts are using two and single ports as well. For beginners, four port technique is easy and safe as it is helpful in opening up the calot's triangle, identifying the critical view of safety and minimizing common bile duct (CBD) Injuries. For more experienced surgeons, three ports and single port techniques are equally safe. The role of the cameraman is crucial in proceeding with a safe dissection.[3,4]

For laparoscopic appendicectomy, three ports are routinely used. A diagnostic laparoscopy can also be carried out at the same time. During the course, if any other pathology is encountered, like torted/ruptured ovarian cyst, ruptured

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ectopic pregnancy, perforated Meckel's diverticulitis or duodenal ulcer, etc. that can also be handled safely via the same approach with only a slight modification in ports positions unlike the open approach in which case one have to extend or give another incision in order to safely perform the procedure.[5,6]

Laparoscopic surgery at the major hospitals is now a norm. Consultants at the tertiary care hospitals are now moving ahead of lap chole and lap appendicectomy and are doing other advanced laparoscopic surgeries as well. Many helping hands are available and the paramedical OT staff has also gained sufficient experience in dealing with the laparoscopic suit. Due to increasing awareness, the approach of the patients at major cities has also changed, with more and more people demanding for a laparoscopic approach than open one.[7]

We present our short series of laparoscopic surgeries at a district level hospital where laparoscopy is still in infancy and practiced very less or not at all. The reasons are; lack of awareness among the patients who are less educated and poor, non-availability of equipment, less exposure, lack of laparoscopic skills and proper training programs for the peripheral surgeons. The purpose of this short audit is to see whether laparoscopy can be practiced at peripheral hospitals or not, what are our limitations and what is the patient perspective of seeing minimal invasive approach as a new advancement in surgery.

Material and methods:

This study was carried out at a private setup at district Battagram from December 2015 to September 2016. It was a descriptive case series with a total number of 52 patients.

All the patients between the age of 18 and 45 years with the diagnosis of acute appendicitis and symptomatic gall stones undergoing laparoscopic appendicectomy and cholecystectomy respectively were included in the study. Those having uncontrolled diabetes and hypertension, appendicular abscess, appendicular mass, acute cholecystitis, Hepatitis B & C, previous abdominal surgeries and those who did not consent for laparoscopy were excluded from the study.

Diagnosis of acute appendicitis was made clinically supported by relevant investigations like leucocyte count and ultrasound abdomen. Diagnosis of symptomatic gall stones was confirmed with an ultrasound of the hepatobiliary tract. The surgical procedure, its benefits and harms were explained to the patients and awritten informed consent was obtained.

All the patients received preoperative antibiotics (ceftriaxone and metronidazole in case of acute appendicitis and ceftriaxone in case of cholelithiasis) half an hour before surgery or at induction of anesthesia. Lap chole was carried out using four ports technique in the standard method. Clips were applied after the critical view of safety was established. Gall bladder was removed via the epigastric port. Laparoscopic appendicectomy was carried out using three ports in the standard way. Pelvic organs were looked for in each case. Appendix was removed through the suprapubic or left iliac fossa port. In case of difficulty to proceed safely, the case was converted to formal open surgery. The patients were kept admitted for 48 hours post operatively and observed for any post-operative complications.

The demographic and clinical data was recorded on a proforma and analyzed using SPSS version 21.

Results:

A total of 52 patients, 7(13%) male and 45(87%) femalewere included in the study. The mean age of the patients was 27 years with a range of 18 to 45 years. Laparoscopic appendicectomy was carried out in 35(67%) while lap chole in 17(33%) patients. There were 7 males and 28 females in the laparoscopic appendicectomy group while there were 17 females with no male in the lap chole group. The indication in all patients of lap chole was recurrent biliary colic secondary to gall stones and in lap appendicectomy was acute appendicitis. No patients were withdrawn from

Table : Study statistics

Age Range	**18 to 45 years**		
Mean age	27 years		
Total patients	52	Male	Females
		7 (13%)	45 (87%)
Lap appendectomies	35(67%)	7 (13%)	28(54%)
Lap choles	17(33%)	0	17(33%)
Conversion	5 Lap appendix (9.6%)	Reason: 1: bleeding, inability to identify base of appendix. 2:retroceacal subserosal appendix	
Major complications	Nil		
Wound infection	Nil		
Hospital stay	48 hours average		

the study, and there was no perioperative mortality or morbidity like organ failure, appendicular stump leakage,pelvic abscess, CBD injury and leak from the cystic duct.

In the entire series, 5 patient of lap appendicectomy were converted to open because of inability to identify base of the appendix and bleeding in 2 cases and appendix being retroceacal, subserosal in 3 cases. The decision of conversion was taken in the better interest of the patients when it was felt that proceeding with the laparoscopic approach is not safe. The conversion rate was 9.6 %. No patient developed port site wound infection. All the patients were up and above on the first post op day. Hospital stay was 48 hours on average. The patients were satisfied with the minimally invasive procedure.

Discussion:

Diagnostic laparoscopy started in 1960s and at the start of 1980 it was transformed from not only a diagnostic but a surgical procedure as well by the pioneers of laparoscopic surgery Semm K and Muehe E. Since then it has evolved rapidly as a new and minimally invasive approach to a wide range of procedures. The surgical community has welcomed it and it has become gold standard in many surgeries.[8] Nowadays Cholelithiasis, Appendicitis, Hernias, tubo ovarian pathologies and many other surgical problems are routinely dealt with laparoscopy and it has since become a frequently applied technique for a wide field of indications. Advanced procedures like gastrectomy, colectomy, splenectomy and hysterectomy too are carried out using this modality. Improvements in surgical training, developments of instruments, imaging, surgical techniques and a great enthusiasm on part of the surgeons has made laparoscopic surgery safe and feasible across different surgical fields.[9]

The available literature comparing the outcome of laparoscopic vs open appendectomy clearly shows an advantage of the laparoscopic procedure. Laparoscopic approach has been proven to be a safe and feasible option in the treatment of acute appendicitis and even complicated appendicitis. It also lowers the number of wound infections, results in less pain, has faster recovery, and there is an earlier return to work.[10] Similarly the recent data on laparoscopic cholecystectomy shows less morbidity and mortality, postoperative pain, respiratory and wound related complications compared to those who underwent open surgery.[1]

Keeping in view the above discussion, it is clear that the world has accepted laparoscopy as an alternative to open surgery and they are exploring new horizons in it. In our country too, laparoscopy has replaced many routine open procedure and the number of experts in advanced laparoscopic surgeries are increasing day by day.[7,11] Compared to tertiary care hospitals, laparoscopy has not gained much popularity at the district level hospitals and periphery. The reasons are lack of facilities, trained staff and skilled laparoscopic surgeons in these areas. The awareness level of the people in these areas is low mostly because of poor socioeconomic status and lack of education, that's why they don't know the benefits of laparoscopic surgery and so don't demand from the surgeon. Besides all this, in a few areas at district level, some people have taken the initiative and have started laparoscopic surgeries.[12]

We conducted this short study to assess the feasibility of laparoscopic surgery at district level. We started from common cases as mentioned. The reason being, not to encounter difficult situation in the beginning. The issues which we

faced were lack of trained theater staff and anesthetist and counselling of the patient regarding minimally invasive approach. With little effort the technical issues and training of the staff was smooth lined. Regarding counselling of the patient, when they were briefed about the minimally invasive approach, majority of them happily consented for the procedures. In our short series, majority of the patients were female as appendicitis and cholecystitis is more common in this group. Hospital stay was 2 days on average and there were no major complications. The results are comparable with other studies conducted on the same subject.

This is a very short series of patient from which it is very difficult to draw conclusions but from our early experience we can say that laparoscopy is as feasible at district level as it is at tertiary care. Further studies with large case series are needed to support our statement confidently.

Conclusion:

We conclude that laparoscopic surgeries should be encouraged at district hospitals. This advancement in surgery needs to be spread to all levels.

Funding Sources: None

Conflict of interest: None

Role and contribution of authors:

Dr Kishwar Ali, collected the data and wrote the initial writeup

Dr Nadir Saif Ullah Khan, collected the data and references and helped in writing introduciton, methodology and discussion

Dr Humera Latif, collected the references, and helped in introduction and discussion writing

Dr Muhammad Zarin, criticaly review the article, and helped in discussion, results and conclusion writing

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