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LAPAROSCOPIC ASSISTED APPENDICECTOMY THESIS DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE AWARD DIPLOMA IN GENERAL SURGERY DEGREE OF THE UNIVERSITY OF KUFA ,COLLEGE OF MEDICINE

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ABSTRACT

Background, Acute appendicitis is the most common cause of acute abdomen in young adults approximately 7% of population develop appendicitis in their life time thus making appendicectomy the most frequently performed abdominal operations the usual treatment of acute appendicitis is by appendicectomy which can be performed by either Open appendicectomy or Laparoscopic Assisted Appendicectomy Objective,The laparoscopic appendicectomy can be performed using total intracorporeal or laparoscopic hand assisted open appendicectomy We present our experience of laparoscopic assisted appendicectomy(LAA) The objective was to assess the results retrospectively and prospectively in terms of specific related complications,operation time,hospital stay and return of bowel activity Methods,Between years 2006-2013 three ports laparoscopic assisted appendicectomy was performed in 90 patients in Najaf Al-Ashraf city with acute appendicitis,all patients with perforated and gangrenous appendicitis were included ,The appendicectomy was performed via an assisted three ports method using 5 or 7 or 10mm umbilical port,another 5mm port in right iliac fossa exactly against the base of appendix and 5mm port at left inguinal crease or suprapubic,all patients had their (LAA) done within 4-24 hours of admission Result:Three ports laparoscopic assisted appendicectomy was successful in 98,88% of cases,acute appendicitis was the cause of acute abdomen in 100% of patients,the conversion to open appendicectomy was 1,11% of patients,the mean operation time was 32,5 minutes and the mean hospital stay was less than one day,the port site infection was 0% ,visceral injury was 0% and intra-abdominal abscess also 0% Conclusion:Laparoscopic Assisted Appendicectomy can be converted to total intracorporeal appendicectomy or to open appendicectomy when required and has advantage of full laparoscopy of full abdomen,it has no limitations in cases of extreme obesity,thick mesentry,gangrenous appendix,very large and thick appendix and difficulty in finding the appendix,control of bleeding ,division of adhesions and deal with other associated pathology,The overall morbidity was very low,there were no specific complications related to

KEY WORDS : Laparoscopic Assisted Appendicectomy, Thesis dissertation,

INTRODUCTION

Acute appendicitis is the most common cause of acute abdomen in young adults.Approximately 7% of population develop appendicitis in their life time,with peak incidence between ages of 10 and 30 years.Thus making Appendicectomy the most frequently performed abdominal operations.

In most instances of appendicitis,luminal obstruction leads to bacterial overgrowth,active secretion of mucus and increased luminal pressure.Increased pressure leads to decreased venous return and later decreased arterial inflow,which result in gangrene,bacterial translocation and perforation.the cause of obstruction is usually lymphoid hyperplasia in young patients and fecalith in adults.

The usual Treatment of acute appendicitis is by Appendicectomy which can be performed by several surgical modalities:

1.Open conventional Appendicectomy
2.Laparoscopic Appendicectomy
3.Endoscopic Appendicectomy has been also tried

Laparoscopic appendicectomy can be done by different techniques,either Totally laparoscopic (intracorporeal)or laparoscopic assisted appendicectomy(LAA)

In conventional open appendicectomy which is performed by Grid-iron incision or Lanz incision,is usually easy to perform,less expensive and shorter operating time,but the surgeon does not has the opportunity to visualize the rest of peritoneal cavity.complications of open appendicectomy include wound infections,intra abdominal abscess,ileus,portalpyaemia(pylephlebitis),faecal fistula and adhesive intestinal obstruction. In totally laparoscopic appendicectomy which is an intracorporeal operation requires three or more ports,endoloop,staplers for appendicular vessels and base ligation and experience in intracorporeal ligation.In Laparoscopic Assisted Appendicectomy(LAA) two ports are used,which has the advantages of diagnostic laparoscopy and open appendicectomy with advantage of minimal access surgery(MAS),it is simple ,safe and can be converted to open appendicectomy when required.Advantages of LAA in comparision with open technique include less mobilization of viscera,less wound infections,rapid return of bowel function,less adhesions and less effect on female fertility.

Patients and Methods

This is a case series study(retrospective and prospective study) of 90 patients had underwent Laparoscopic Assisted Appendicectomy from march 2006 to june 2013 at private clinic at Al Najaf Al ashraf city.All operations done under General Anaesthesia.All patients presented with symptoms and signs of acute appendicitis,laboratory tests such as W.B.C count and general urine examination were performed to all patients to exclude another diagnosis.Abdominal ultrasound was performed to all patients.All patients had received ceftriaxone and metronidazole before induction of anaesthesia.in majority of cases Laparoscopy was performed within 72 hours from beginning of symptoms of acute appendicitis.laparoscopy was performed with patients lying supine ,head down and slightly tilt to left.Three ports technique were used.pneumoperitoneum was established by closed technique using 5 or 7 or 10mm umbilical port with 0,30 degree angled telescope,in few patients especially children(n=4) Veress needle used for pneumoperitoneum establishment.Once the peritoneal

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cavity entered a diagnostic laparoscopy was performed to confirm the pathology.the other ports are 5mm port at left inguinal crease or suprabupic.another 5mm port in the right iliac fossa.the appendix was freed from its mesentry using dissector,the appendiceal artery was cauterized using unipolar or bipolar cautery or harmonic,this was done intracorporeally.the naked appendix was delivered extracorporeally using laparoscopic grasper,sponge or Kelly forceps together with the 5mm port(at the right iliac fossa) while deflating the abdominal cavity.Appendicectomy then done extracorporeally.the stump was returned back in the abdomen after cauterization of the stump or swapping it with Povidone-Iodine swap and also the port site.Aperitoneal lavage was performed in all cases of Laparoscopicslly Assisted Appendicectomy using 10% Povidone-Iodine solution diluted in 500 ml of normal saline solution this done to decrease the incidence of intra abdominal collection.Drain left through right iliac fossa port when required

RESULT

The three ports Laparoscopic Assisted Appendicectomy was successful in 98,88%(n=89).the number of patients who were converted to open appendicectomy was 1,11%(n=1).there was no localized or generalized peritonitis.

The incidence of perforated or gangrenous appendicitis was 3,33%(n=3),inflamed appendix 100%(n=90),appendix looked normally in laparoscopy was 0%(n=0).perforated appendix with faecolith about 2,5cm 1,11(n=1) of patients.it was converted to open appendicectomy.All amputated appendicectomies were sent to histopathology and all of them were reported to be acute appendicitis. The appendicectomy was performed between 4-24 hours of admission.the mean operation time was 32,5 minutes(range 15-50 minutes)

Abdominal drains were used in 3,33%(n=3) of patints.the mean hospital stay was less than one day.postoperatively,there were no complications such as intra abdominal abscess,intra abdominal bleeding,injury to viscera,port site wound infection,rectus sheath abscess and necrotizing fasciitis.returning of bowel sounds were less than 6 hours.there was no mortality from this procedure.

Table 1:number of patients=90, age group(7-40)years

age	Gender		total
	Female	male	
7-20	17	22	39
20-30	10	19	29
30-40	5	17	22
total	32	58	90

Table 2:comparing the result of four studies

no	study	No.of patients	Port site infection	No.of patients converted to open	Hospital stay
1	Our study	90	0	1	Less than one day
2	Golash study	2380	14	109	1,5 day
3	Misauno	36	2,8%	33	
4	Aga khan university	49	2%	31	1,97

Discussion

The advantages of laparoscopic appendicectomy are well proven in several retrospective and prospective randomized trials and it can be formed by hand assisted laparoscopy.

This approach is beneficial in early appendicitis as well as complicated appendicitis.on the other hand Laparoscopic Assisted Appendicectomy is simple,easy to learn and has the combined advantages of open appendicectomy and full laparoscopy of abdomen.the overall morbidity is extremely low.there were no specific complications related to this technique and the incidence of ports site infection is 0%.in comprasion with vishwanath golash study which was performed between 1998-2007 at Sultan Qaboos Hospital including 2380 patients the port site infection rate was 0,6%(n=14).we did not encounter any increased risk of intraperitoneal abscess,while in Golash study it was 0,16%(n=4).in our study the conversion to open appendicectomy is 1,11%(n=1) while in Golash study was 4,6%(n=109) patients.abdominal drains was used in 3,33%(n=3)patients in our study while in Golash study it was 16%(n=109)patients.the mean operation time was 32,5 minute in our study while in Golash study it was 25 minutes(range 10-65).the mean hospital stay in our study was less than one day,while in Golash study was 1,5 day range(1-7).in Misauno study of 36 patients who underwent LAA at Jos University Teaching Hospital,Jos Nigeria, the mean operating time was 33 minutes with range (30-45)minutes.while in our study it was Misauno study 1 being subcutaneous emphysema and the other patient(2,85% patient) had port site infection.in our study we did not have such complications.in Aga khan University Hospital,Karachi,Pakistan study in which 49 patients underwent LAA,the mean postoperative stay was(1.97-2,3).in our study it was less than one day,the mean operative time was 31 minutes while in our study it was 32,5 minutes.in Aga khan university study 2% of patients had port site infection,while in our study it was 0%.

Conclusion

Laparoscopic Assisted Appendicectomy(LAA),can be done safely and has advantage of full laparoscopy of abdomen.it has no limitations in cases of extreme obesity(n=7)patients.thick mesentry very large and thick appendix,complicated appendicitis and difficulty in finding the appendix.in comparision with open appendicectomy the morbidity is much less regarding the hospital stay and return to normal bowel activity.previous abdominal surgery is not contraindicated to this procedure.

The overall morbidity is extremely low.there are no specific complications related to this technique.

Advise:This procedure requires an experienced surgeon in Laparoscopy.

References

1. KumarB,Samad,superiority of laparoscopic appendicectomy over open appendicectomy.Rawal Med J 2008 64-65
2. PeiserJG,GreenbergD,Laparoscopic Versus open appendicectomy.Isr Med J 2002.
3. Maaj,Kirwood Ks.the appendix in Townsend CM,et al,editors;Sabiston,Philadelphia,2008,Mathews JB,HodinRA:acute abdomen and appendix,Greenfields Surgery,Philadephia,2006
4. Kargars,Mirshami,laparoscopic versus open appendicectomy,Acta Med Iran 2011
5. Scott-conner Ce,HaltJ.laparoscopic appendicectomy.Annsurg 2011
6. Barazar R,laparoscopic appendicectomy.East Afr.Med J 2004