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Research Paper

Laparoscopic Appendicectomy- Study of 25 Cases Contributors

Medical Science

KEYWORDS : Acute appendicitis, laparoscopic appendicectomy, advantages and disadvantages

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ABSTRACT

Background: Appendicitis is one of the commonest disease faced by the surgeon. Appendectomy is one of the commonest surgery done by any General Surgeon today. Until the close of the 19th century appendicitis remained unrecognised. During recent years the mortality from appendicitis has been falling. This is mainly because of the increased awareness, availability of medical facilities, better antibiotics and early recognition of the disease. Laparoscopy is an excellent aid in diagnosis and laparoscopic appendectomy can be performed easily. Many studies have firmly proved that laparoscopic appendectomy is associated with less post-operative pain, short hospital stay, faster recovery, less post-operative complication, cost effective and good cosmesis and thus it is gradually becoming preferable choice amongst patients. Material and methods: The study was conducted on 25 patients who all underwent clinical examination and were subject to the routine examination and were diagnosed for appendicitis. All patients underwent laparoscopic operation for removal of appendix. The aims of this study are as follows:To study cases of planned laparoscopic appendectomy in terms of technique,To study advantages of laparoscopic appendectomy in terms of hospital stay, cost, patient compliance and morbidity, To evaluate different methods of dealing mesoappendix as well as appendix, To evaluate complication rate in laparoscopic appendectomy. Results: Appendicitis can occur at any age. In this study, it was common during the 2nd and 3rd decade of life. Appendicitis is more common in male but in this study female predominates by 70%. Rt. Lower abdominal pain is the commonest symptom but fever is found only in 8% of the cases. The duration of surgery in most of patients were less than 1 hour. In 84% of patients, the hospital stay was less than 3 days. Conclusion: Laparoscopic appendectomy is a very useful technique for reducing hospital stay and complications. With better and regular training in minimal access surgery and better ergonomics now available, the time has arrived for it to take its place in every surgeon's repertoire.

Introduction

Appendicitis is one of the commonest disease faced by the surgeon. Appendectomy is one of the commonest surgery done by any General Surgeon today. Until the close of the 19th century appendicitis remained unrecognised. Within a few years everyone witnessed a meteoric rise in its incidence from an unrecognized disease to being the commonest of all acute abdominal diseases. However, over the past few years many workers have found a definite decrease in the incidence of the appendicitis and appendectomy performed. The changing pattern has been attributed to the changing dietary habits.[1] During recent years the mortality from appendicitis has been falling. This is mainly because of the increased awareness, availability of medical facilities, better antibiotics and early recognition of the disease.[2] If the diagnosis is made at an early stage of the attack and particularly in the absence of a localised mass the appendix should be removed urgently.... a thought shared by most surgeons. With the invention of laparoscope, the laparoscopic approach is gaining substantial popularity among surgeons as well as patients.The application of laparoscopy in diagnosis and management of appendicitis is natural step for the surgeon particularly in the case where there is diagnostic dilemma i.e. in children and fertile female.[3] Laparoscopy is an excellent aid in diagnosis and laparoscopic appendectomy can be performed easily.[4] Laparoscopic appendectomy, although not having an overwhelming advantage to the open technique, is preferable in patients having obesity, athletes and patients concerned about cosmesis. Many studies have firmly proved that laparoscopic appendectomy is associated with less post-operative pain, short hospital stay, faster recovery, less post-operative complication, cost effective and good cosmesis and thus it is gradually becoming preferable choice amongst patients.[5]

The aims of this study are as follows

- To study cases of planned laparoscopic appendectomy in terms of technique
- To study advantages of laparoscopic appendectomy in terms of hospital stay, cost, patient compliance and morbidity.
- To evaluate different methods of dealing mesoappendix as well as appendix.
- To evaluate complication rate in laparoscopic appendectomy.
- To evaluate the...
  - Age incidence
  - Sex incidence
  - Symptoms of appendicitis
  - Signs of appendicitis
  - Investigation and their advantage in diagnosis
  - The operative finding at the time of laparoscopic appendectomy along with other pathology
  - The incidence of coincidental pathology during laparoscopic procedure

Materials and methods

The study was conducted on 25 patients who all underwent clinical examination and were subject to the routine examination and were diagnosed for appendicitis. All patients underwent laparoscopic operation for removal of appendix. The following data were recorded: Technique of initial port – open/closed, No. of ports used and its site, Intraoperative findings (like Presence of adhesion, Presence of omentum around appendix, Condition of appendix, Local collection, Appearance of terminal small intestine), Per operative complication (like Vascular injury, Injury to abdominal viscera, Bladder injury, CO_2 embolism, Respiratory acidosis, Hyper carbia, Subcutaneous emphysema, Use of electro dithermy (cautery) for mesoappendix, Use of clip), Post-operative complications (like Subcutaneous emphysema, Shoulder pain, Abdominal distension, CO_2 embolism, Bleeding / slippage of ligature, Infection / wound gap, Faecal fistula, Port hernia, Post-operative adhesion, Pain at incision site), Patient's compliance, Cost factor and Hospital stay. All patients were followed for a period of 3 months and observed for any post procedure complications.

Results

In the present study of 25 cases of laparoscopic appendectomy, the following data has been analysed

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Table – 1 Age incidence

Age in years	No. of cases	Percentage
0-10	-	
11-20	7	28%
21-30	14	56%
>30	4	16%

Table – 2 Sex distribution

Sex	No. of cases	Percentage
Male	8	32%
Female	17	68%
Total	25	100%

Table – 3 Symptoms at presentation

Symptoms	No. of cases	Percentage
Pain	25	100%
Vomiting	09	36%
Fever	02	08%
Bowel disturbance	03	12%
Urinary symptoms	06	24%

Table – 4 Signs at presentation

Sign	No. of cases	Percentage
Tenderness in RIF	25	100%
Rebound tenderness	-	-
Rigidity / Guarding	-	-
Tachycardia	-	-
PIR Tenderness	4	16%

Table – 5 Duration of surgery

Duration	No. of cases	Percentage
30-45 mins	01	04%
45min-1 hour	11	44%
>1 hour	13	52%

Table – 6 Complications

Complications	No. of patients	Percentage
IMMEDIATE		
Wound infection	02	08%
Shoulder pain	02	08%
DELAYED	-	-

Table – 7 Hospital stay

Postoperative hospital stay	No. of patients	Percentage
1 to 3 days	21	84%
4 to 7 days	2	8%
>7 days	2	8%

Discussion

Appendicitis can occur at any age. In this study, it was common during the 2nd and 3rd decade of life. Appendicitis is more common in male but in this study female predominates by 70%.[6] Rt. Lower abdominal pain is the commonest symptom but fever is found only in 8% of the cases. Rt. Iliac fossa tenderness is the sign of importance as in this study also 100% cases the sign is positive.[7] Although Barium meal and ultrasonography is equivocal in recurrent appendicitis diagnostic laparoscopy is a useful tool. 3 port technique is standard in form of umbilical port 10mm, right lumbar 5mm port in midline suprapubic position. However, 4 ports technique is the other alternative. Mesoappendix is dealt by application of endoscopic clips, staples or electrocoagulation. Base of the appendix is secured prior to the division by loop ligature passed over the base of appendix. Endoscopic linear staple –cutting device is an alternative. Electrocoagulation is to be used with great precaution as it has its own dangerous complications. Retrograde appendectomy is feasible laparoscopically. Incidental appendectomy can be decreased except – right lower quadrant pelvic pain without other pathology in young patient. Right lower quadrant pain in other pelvic pathology like PID, endometriosis, tumour in appendix, calcified appendicolith. Common complications are wound infection, bleeding, visceral injury and port hernia. In this study, only two patients suffered from wound infection. Advantages of laparoscopic appendectomy are: Less post-operative pain, Rapid recovery, Short hospital stay, Less post-operative complications like adhesion and wound infection, Comparatively cost effective for working people.[8] Disadvantages of laparoscopic appendectomy are: Requires technical expertise and training, Costlier instruments and infrastructure required, G/A always.[9] Laparoscopic appendectomy is contraindicated in patients with severe cardio-respiratory dysfunction, frozen abdomen from adhesions and uncorrectable coagulopathy.[10] Wound infection is far less in laparoscopic technique because metabolic response to surgical injury is far less in laparoscopic appendectomy than in open appendectomy. The overall mortality rate is less than 0.2% but increases up to 5%as the age advances.[11] Operative time is comparatively more in this technique but as learning curve improves the time comes at par with open surgery. Instrumentation is main stay of surgery including linear stapler to deal with mesoappendix and appendix. Although laparoscopic appendectomy is an established procedure as future technique – every surgeon should value the potential of minimal invasive approach, while acknowledging its technical complexity to the best benefits of the patient.

Conclusion

Laparoscopic appendectomy is a very useful technique for reducing hospital stay and complications. With better and regular training in minimal access surgery and better ergonomics now available, the time has arrived for it to take its place in every surgeon's repertoire.

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