

LAPROSCOPY-A DIAGNOSTIC AND THERAPEUTIC TOOL IN MANAGEMENT OF ACUTE ABDOMEN

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The role of laparoscopy in the management of patients presenting to one surgical firm with an acute abdomen is discussed. 37 laparoscopies were performed over a 24 months' period and it altered the diagnosis in 24.3% of cases and the management in 13.5% of cases. At laparoscopy the diagnosis of appendicitis was made in 17 patients (76.4% were attempted laparoscopic appendectomies), pelvic inflammatory disease in 5 patients, torted fimbrial cyst in 2 patients and free pus in the right lower peritoneum as a result of a perforated appendix was seen in 4 patients. Normal laparoscopy was performed in 5 patients and 2 patients who presented with a perforated duodenal ulcer had the diagnosis confirmed at laparoscopy. 2 laparoscopies were performed on trauma patients, one stabbing and one blunt trauma to the right hypochondrium. It has been demonstrated that diagnostic laparoscopic is a useful adjunct to the general surgeon's armamentarium. It is suggested that the skill of laparoscopy is passed on to junior trainee surgeons who can use this technique to help attain a diagnosis in patients presenting with an acute abdomen.

INTRODUCTION

Acute abdomen is the commonest clinical condition that a surgeon comes across in his daily life. All of us know how difficult yet how important it is to diagnose acute abdomen accurately. The results and outcome are directly proportional to the early and accurate diagnosis. It is seen that routinely the patients of acute abdomen come to casualty departments in late hours of the night where they are attended by junior staff of the surgical team. Both CT scanning and aspiration cytology of the peritoneum² have shown to improve the decision making and reduce management errors. However, such expertise and equipment are not widely available, instead it is possible to provide laparoscope which can be used even by a junior surgeon with some training to handle a laparoscope. In fact, it has been shown in different studies that laparoscopy helps in the management of the acute abdomen³.

MATERIALS AND METHODS

Over a period of two years all patients with acute abdomen had diagnostic laparoscopy. All cases presenting with abdominal trauma (except the two cases discussed) were excluded as they presented with distinctive features and required specific evaluation and work-up.

Serum amylase and urine microscopy readily identified the non-specific presentations of cases with acute pancreatitis and renal tract disease respectively.

Laparoscopy was performed by one surgeon only. All diagnostic laparoscopies were performed through a sub umbilical incision using a 10mm cannula. On six occasions a gynecologist was called to view the screen and give the opinion. Once a diagnosis was obtained, if necessary, additional 5 and 10mm ports were inserted and operative procedures were performed.

RESULTS

37 (26 females, 11 males) with a mean age of 27 years (range 17-66 years) underwent emergency laparoscopy. 31 patients presented with lower abdominal or right iliac fossa pain, 4 presented with upper abdominal pain, one presented with stab in left iliac fossa and another presented with blunt abdominal trauma to the right hypochondrium. Table-1 shows the result of 37 diagnostic laparoscopies.

Out of the 17 patients diagnosed to have appendicitis, an attempt for laparoscopic appendectomy was made on 13, out of which 12 were successful. There was one conversion due to adherent retrocaecal appendix. In 5 cases (4 females, 1 male) no intra-abdominal pathology could be identified. These cases underwent laparoscopic appendectomy. Later the histopathology showed one appendix to have slight mucosal changes with pus in the lumen while the rest were reported normal. All patients had an uncomplicated recovery. Two cases presented as classical perforated duodenal ulcers. The diagnosis was confirmed laparoscopically and closure was attempted in both cases. However, one ulcer was situated superiorly and was adherent to the undersurface of the liver and gallbladder. After dissection of these structures the ulcer was unable to be visualized satisfactorily and it was not

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felt safe to proceed laparoscopically. The second case needed also an open repair due to equipment failure.

Table-1. Laparoscopic diagnosis and outcome of the 37 diagnostic laparoscopies.

Laparoscopic diagnosis	Cases	Out come
Pelvic inflammatory disease	5	Treated with anti- biotic.
Torted fimbrial cysts	2	Excised laparoscopically.
Free pus in the right side of the peritoneal cavity, appendix not visualized.	4	Open appendectomy
Appendicitis	17	13 attempted laparoscopies, 12 successful & 1 converted to open appendectomy
Nonspecific abdominal pain	5	Appendectomy 1 inflamed & 4 normal.
Perforated DU	2	Open repair
Abdominal trauma	2	Discussed in the "Result" in text

One of the two trauma patients had road traffic accident with severe right hypochondrial pain. Laparoscopy revealed a small amount of bile stained fluid in the peritoneum. Abdominal cavity was washed with saline and a drain was left in sub hepatic space. This drained only 50ml of bile stained fluid. The patient was discharged on the third day.

Second patient was admitted with stab in left iliac fossa. Laparoscopy revealed no intra- peritoneal contamination or free blood. He was discharged on the third post-operative day.

DISCUSSION

This study supports the case (4) for women suspected of having acute appendicitis to undergo a preliminary laparoscopy before deciding on appendectomy. Preoperatively three patients with a final diagnosis of pelvic inflammatory disease (PID) had an initial diagnosis of appendicitis. The diagnosis was changed after laparoscopy. The other two women had their initial diagnosis of PID confirmed at laparoscopy. The two women had torted fimbrial cysts, which were previously diagnosed as acute appendicitis. The cysts were excised laparoscopically.

Four cases (3 women and 1 man) had a laparoscopic diagnosis of non- specific abdominal pain (NSAP) in whom a preoperative diagnosis of appendicitis had been made.

These patients had laparoscopic appendectomies as there were no other abdominal pathology visible.

Table 2 Cases where the diagnosis was altered at Laparoscopy.

Cases (n)	Preoperative diagnosis	Postoperative diagnosis
3	Appendicitis	Pelvic inflammatory disease
2	Appendicitis	Torted fimbrial cysts
4	Appendicitis	Non-specific abdominal pain

We have shown that laparoscopy altered the diagnosis in 9 (24.3 %) of cases (Table 2). The preoperative management was changed in 5 (13.5%) cases; those five cases who had a diagnosis changed from appendicitis to PID and the two cases who had the diagnosis changed from appendicitis to that of torted fimbrial cysts. In all these cases appendectomy was not performed. If open appendectomy had been performed on all these cases pre operatively diagnosed as appendicitis, these 5 cases would have continued to carry gynecological pathology.

In this series there was a 0 % negative appendectomy rate for cases with a laparoscopic diagnosis of appendicitis and this supports earlier work which has demonstrated that laparoscopy reduces the negative appendectomy rate ⁵.

The two trauma cases have demonstrated how laparoscopy can allow the surgeon to obtain the same amount of information as at open laparotomy. It also allows diagnostic manoeuvres to be performed, which may indicate the requirement for further surgery. Both patients had a considerably shorter and less stressful admission than if they had been treated conventionally with a formal laparotomy. However, discretion must be maintained and each trauma case should be treated on its urgency and priorities.

We feel general surgeons are rapidly becoming experienced in laparoscopy. Its usage should not be confined to elective procedures as diagnostic Laparoscopy has a useful role in the acute abdomen ^{7,9}.

Laparoscopy in acute abdomen will not only benefit the patient, it will also benefit many trainee surgeons who will be introduced to this general surgical adjunct this way. The results of this study indicate that the use of laparoscopy in acute abdomen can lead to accurate recognition of surgical pathology, alter surgical management and lead to appropriate treatment.

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