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Peroperative Indications for Conversion of Laparoscopic Appendicectomy to Open Appendicectomy

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Introduction

Appendicitis is the most common intra-abdominal condition requiring surgery, with a lifetime risk of 6%. Appendicectomy, one of the commonest procedures in general surgery accounts for about 2%. Though the open technique of Appendicectomy was described by McBurney in 1894 continued to remain the treatment of choice, the first ever laparoscopic Appendicectomy performed by Semm in 1983 paved the way for its widespread global acceptance over the open technique. It combines the advantage of diagnosis and treatment in a single procedure. Moreover it has many advantages than open procedure which is dealt in our study.

Objectives

The various preoperative findings which necessitate conversion of laparoscopic Appendicectomy to open and the advantages of laparoscopy over conversion to open with respect to the following where studied:

- Post operative pain and duration of analgesic use
- Length of hospital stay
- Return to work.

Review Of Literature

Laparoscopic and minimal access surgery continues to expand in the field of general surgery, and diagnostic laparoscopy and laparoscopic appendectomy have become accepted procedures in many surgeons' practices. The early use of diagnostic laparoscopy in patients with right lower quadrant abdominal pain and suspected appendicitis reduces the risk of appendiceal perforation and the negative appendectomy rate to less than 10%. Diagnostic laparoscopy is particularly useful in women of reproductive age and in the obese. In the former, frequently confounding gynecologic disorders can be well visualized to provide the diagnosis, and in the latter, laparoscopy can eliminate the morbidity risks of a large incision. Performing an appendectomy with a normal-appearing appendix has a relatively low risk and will remove appendicitis from the differential diagnosis of right lower quadrant pain in the future. However studies have shown that it is safe to not proceed with appendectomy if the appendix appears normal. Conversion of diagnostic laparoscopy to therapeutic laparoscopy is easily accomplished by the addition of other ports. Trocar placement for laparoscopic appendectomy is a matter of surgeon choice with consideration of the triangle rule for port placement. Diagnostic laparoscopy is usually performed through a periumbilical port, with a 10/11-mm port added midway between the umbilicus and pubis and a 5-mm port placed over the appendix or the right midlateral abdomen if appendectomy is performed . Once the diagnosis is confirmed, the mesoappendix can be taken down with

either hemoclips or the Harmonic Scalpel. The appendix is amputated from the cecum between endoloops or with an endo-GIA stapler. The appendix can then be removed from the abdomen with a specimen pouch or withdrawn into the 10/11- mm port. Care should be taken to prevent contact of the appendix or its contents with the wound edges. There is general agreement that patients undergoing laparoscopic appendectomy have less postoperative pain, a lower rate of wound infection, a lower overall complication rate, a more rapid return to diet, a shorter hospital stay, a longer operative time, and more equipment charges in the operating room. In contrast, a more rapid return to work and a lower complication rate are more controversial claims because prospective studies show differing results. Laparoscopic appendectomy results in a lower wound infection rate compared with an open procedure but have a higher intraabdominal abscess rate if the appendix is perforated. Relative contraindications to laparoscopic appendectomy include previous abdominal surgery precluding safe trocar placement, uncontrolled coagulopathy, and significant portal hypertension. Laparoscopic appendectomy appears to be safe and efficacious. It provides a rapid diagnosis and a significant reduction in negative appendectomy rates in females of childbearing age with suspected appendicitis. Minimal access surgery reduces the morbidity risk in obese patients who require an appendectomy.

Materials and Methods

PLACE OF STUDY: Department of General Surgery, Stanley Medical College Hospital

DESIGN: Prospective study

Sample Size: 50

Inclusion Criteria

- All patients with acute or recurrent appendicitis and its complications undergoing laparoscopic Appendicectomy
- Patients willing for surgery

Exclusion Criteria

- Pregnancy
- Patients less than 12 years
- Patients unfit for GA or pneumoperitoneum
- Patients refuses surgery

A pretested Performa was used to collect relevant information from the patients who matched the above mentioned criteria, such as patient data, clinical findings, lab investigations and follow up events. Investigations included complete hemogram, RBS, blood urea, serum creatinine, ECG, viral markers, and routine urine analysis.

After complete evaluation preoperatively, patients are posted for either elective or emergency Appendicectomy.

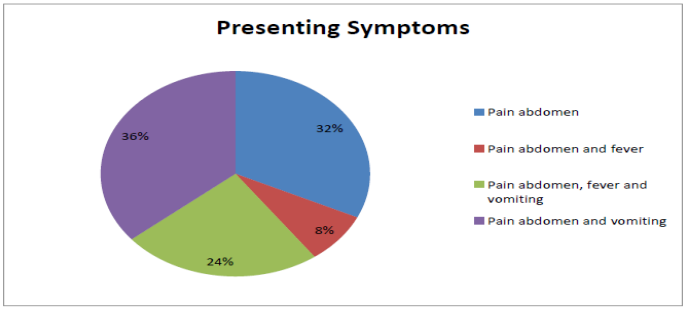
Intra operatively the various reasons for conversion were analysed. Post operatively pain and duration of analgesic use were assessed after 48 hours. (Usually single dose of Inj Tramadol 100 mg im or Inj Diclo 50 mg im given on first POD).

Duration of hospital stay and days taken to return to normal work is analyzed.

Results

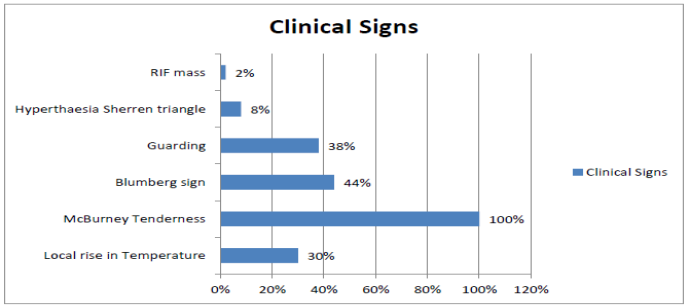
Presenting Symptoms

SYMPTOMS	No of Cases	Percentage
Pain abdomen	16	32
Pain abdomen and fever	4	8
Pain abdomen, vomiting and fever	12	24
Pain abdomen and vomiting	18	36
Total	50	100

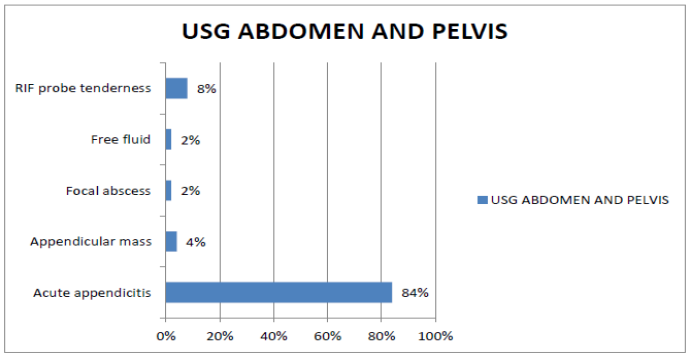


Clinical Signs

SIGNS	No of cases	Percentage
Local rise in temperature	15	30
McBurney tenderness	50	100
Blumberg sign	22	44
Guarding	19	38
Hyperthaesia in Sherren triangle	4	8
RIF mass	1	2

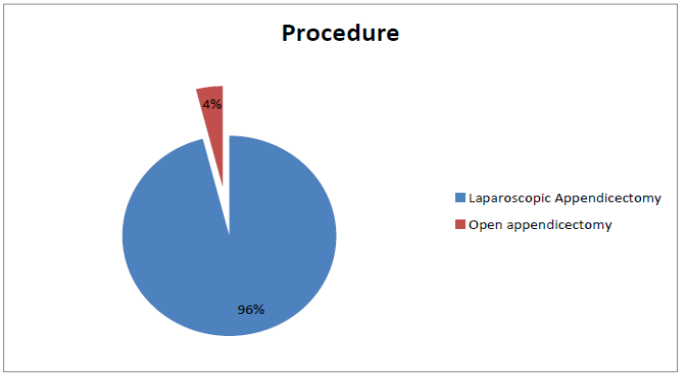


USG Abdomen and Pelvis



Conversion Rate

Of the 50 cases posted for elective laparoscopic Appendicectomy only 2 (4%) was coverted to open. Majority of the patients (96%) irrespective of complicated or uncomplicated appendicitis underwent Laparoscopic Appendicectomy.

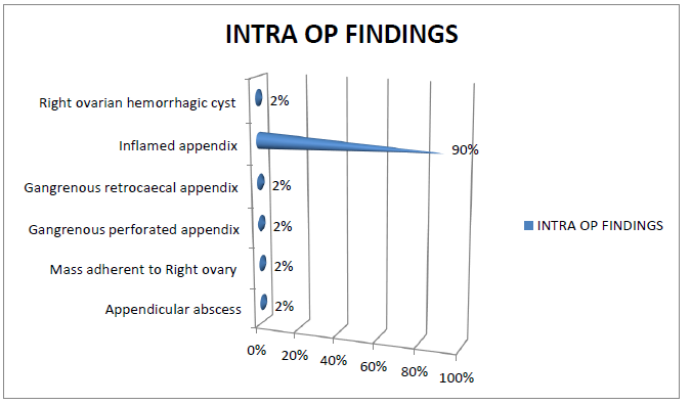


Reasons for conversion

Case 1: Dense adhesions

Case 2: Associated Right hemorrhagic ovarian cyst (10*12 cm)

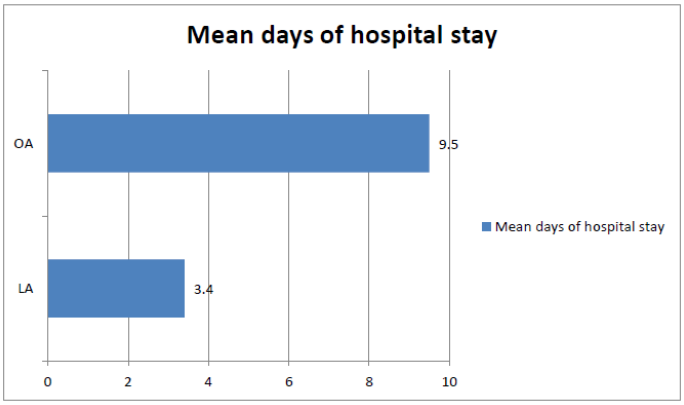
Intra OP Findings



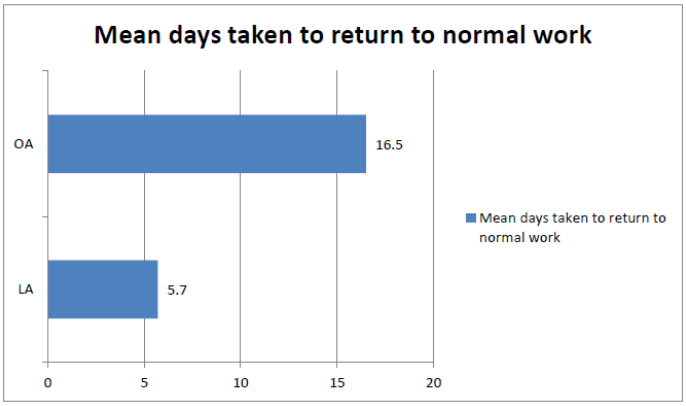
Post OP Pain

Post Op Pain (Visual Analog Scale [VAS])	LA		OA		LA vs. GA	
	No	%	No	%	Chi square	P value
G1	11	22.9	0	0	26.85	<0.05, Sig
G2	29	60.4	0	0		
G3	8	16.7	1	50		
G4	0	0	1	50		
Total	48	100	2	100		

Days of Hospital Stay



Days Taken To Return to Normal Work



Discussion

Conversion from laparoscopic to open Appendicectomy is unavoidable in some patients. Complicated cases were well challenged in our study. In our study of 50 patients all were initially started with laparoscopic procedure but only 2 cases (4%) were converted to open due to above mentioned causes. Post op pain was evaluated in all 50 patients at 48 hours after surgery of which all the patients done laparoscopically had less pain (VAS G1 and G2) whereas patients done in open technique had higher intensity (VAS G3 and G4). Post op days in hospital done in laparoscopic procedure were range of 3-5 days (mean 3.4 days) which was shorter than open technique with range of 9-10 days (mean 9.5 days). The average days taken to return to normal work was shorten in laparoscopic (range 5-8 days; mean 5.7 days) than open technique (range 16-17 days; mean 16.5 days).

Conclusion

This study was aimed to assess peroperative indication of conversion from lap to open Appendicectomy with a small study group of 50 patients. Laparoscopic technique has advantage over open in terms of shorter hospital stay and faster recovery. Though some of complicated cases were well challenged laparoscopically it is mandatory to have standard laparoscopic training to tackle the tough situation peroperatively for better outcomes.

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