

## TO STUDY THE EFFICACY OF LAPAROSCOPY IN CHRONIC ABDOMINAL PAIN

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**ABSTRACT: AIMS AND OBJECTIVES:** "To study the efficacy of diagnostic laparoscopy is undiagnosed chronic abdominal pain" in a prospective study of diagnostic laparoscopy in identifying the etiology of undiagnosed chronic abdominal pain and to study the accuracy of diagnostic laparoscopy in evaluating the undiagnosed chronic abdominal pain. **METHODS:** The study was conducted in JSS Hospital, Mysore during study that is from July 2006 to 2008. 50 patients with undiagnosed chronic abdominal pain satisfying the inclusion and exclusion criteria were included in this study. After a details history and clinical examination of the abdomen, Patients were subjected to various investigation viz, radiological investigation X-ray erect abdomen, USG abdomen and pelvis, CT scan and endoscopic studies – UGI endoscopy and colonoscopy. After initial assessment they were subjected to laparoscopy. The age/sex distribution, clinical presentation, the investigations the laparoscopic procedures were all evaluated and compared with standard literature. **RESULTS:** A total of 50 cases were enlisted in this study, recurrent appendicitis accounted for 32% next common was postop adhesions accounted for 26%. Maximum distribution was observed in the age group of 21-40 years (56%) followed by 41-60 years (28%), with the age range being 12-80 years. Among them 19 were male patients and 31 female patients. With the male to female ratio being 1:1.6. In our study for undiagnosed chronic abdominal parts abdominal parts obviously all investigations studies will be inconclusive. Radiological studies including x-ray erect abdomen, USG abdomen & pelvis, CT scan. X-rays and USG done in all 50 patients but all are negative. CT scan done only 2 patients (4%) is negative. Endoscopic studies done wherever applicable, UGI endoscopy done in 33 patients (66%), colonoscopy done in 2 patients (4%) but are negative. After diagnostic laparoscopy recurrent appendicitis and post-operative adhesions both constituted 58%. Tuberculous peritoneum diagnosed in 10%. Secondaries in liver diagnosed in 8%, retro duodenal mass diagnosed in 2%, chronic cholecystitis diagnosed in 2%, post-operative adhesions involving female sex more (38.7%), male sex (5.3%). Normal study is 20%. Laparoscopic procedures done simultaneously wherever feasible. Appendicectomy done in 38%, adhesiolysis done in 25%, biopsy taken in 20%, cholecystectomy done in 2%, nothing done in 20%. So total simultaneous therapeutic procedures done in 66%. After diagnostic procedures diseases are confirmed by HPE reports then patients were treated accordingly. HPE done for both therapeutic and diagnostic specimens. All appendix except 3, and gall bladder specimens shows chronic inflammation. 3 appendix specimens show normal study. Specimens took for diagnostic purposes (20%) shows, tuberculosis 10%, metastatic adenocarcinoma 8%, Hodgkin's lymphoma 2%. In our study morbidity is 6% and no mortality. **CONCLUSION:** In our study recurrent appendicitis was the commonest cause for chronic pain abdomen, who presented with right lower quadrant pain. Next

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common is post-operative adhesions. Apart from diagnostic procedures, simultaneous therapeutic procedures can also be done preventing unnecessary laparotomy. No cases required conversion to laparotomy. An exclusion of significant disease in patients with undiagnosed chronic abdominal pain not only gives peace of mind but also avoids further costly and uncomfortable investigations. Laparoscopy is very safe, quick and elective as a major diagnostic tool in unexplained chronic abdominal pain. Laparoscopy is a very accurate mode of diagnosing abdominal pain with high sensitivity and specificity.

**INTRODUCTION:** Laparoscopy is defined as the telescopic visualization of abdomino pelvic cavity through small openings made on the abdominal wall.<sup>1</sup> Although laparoscopy has been used for many years by gynaecologists to evaluate pelvic pathology, most general surgeons did not recognize its value.<sup>2</sup>

Diagnostic laparoscopy can be done under direct vision with simple equipment as it does not require a video camera or the electronic gadgetry associated with laparoscopic surgery. With advances in optics, laparoscopy allows perfect visual examination of the peritoneal cavity and further makes possible histological diagnosis of target biopsy under vision. Laparoscopy is as much a surgical procedure as an exploratory laparotomy, often just as informative, and to the trained surgeon affords a better view of the entire peritoneal cavity than the usual exploratory incision. To achieve a high rate of positive diagnosis from laparoscopy requires much more than correct technique; it requires a thorough background of surgery, sound clinical acumen as also knowledge and awareness of abdominal pathology.<sup>3</sup>

1. The chronic abdominal pain is a challenging problem for primary care general surgeons, when symptoms are atypical or radiological/biochemical studies prove to be inconclusive. In such cases diagnostic laparoscopy may come to his rescue and provide accurate diagnosis and simultaneously may prove to be therapeutic. The rapid recovery and return to normal activity that follow laparoscopic surgery provide an extra incentive for the surgeon to adopt more laparoscopic techniques. To reduce the incidence of unnecessary laparotomy for chronic abdominal pain we are aim to do the study of the efficacy of diagnostic laparoscopy in identifying the etiology of undiagnosed chronic abdominal pain.

**METHODOLOGY:** This is retrospective study which was conducted in J.S.S. Hospital, Mysore attached to J.S.S. Medical College, Mysore, Department of Surgery the study period from September 2006 to September 2008. The patients who attended with a complaint of chronic pain abdomen (pain more than 2 months) were included in this study and acute abdomens were excluded from this study. The objectives of the study were efficacy of diagnostic laparoscopy in identifying the etiology of undiagnosed chronic abdominal pain. To study the accuracy of diagnostic laparoscopy in evaluating the undiagnosed chronic abdominal pain.

The patients who were having chronic pain abdomen were admitted in surgery department and following age, sex and detail history was taken. After that clinical examination, routine investigations were done later they were subjected to laparoscopy. This study includes 50 patients out of which 19 males and 31 females.

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A thorough evaluation of peritoneal cavity was made and wherever required biopsy was taken. Subsequently an accurate diagnosis was made and wherever feasible a therapeutic procedure was also performed by laparoscopy. If the condition did not require any intervention nothing else was done. The operative time represented the total time is in minutes from insertion of the verres needle to the skin closure. Hospital stay was determined from the time of admission to the time of discharge. Complications were determined intra operatively and post operatively, morbidity in respective wound sepsis (surgical site infection) persistent post-operative pain, shoulder pain. Mortality if any was recorded. The patients were followed up in the OPD after discharge to know complications and regarding effectiveness of surgical treatment.

**RESULTS:** Our study shows following results.

<b>Ages group in years</b>	<b>No. of cases</b>	<b>Percentage</b>
Below 20	4	8
21-40	28	56
41-60	14	28
Above 61	4	8

Table 1: Age distribution

The age group in which chronic abdomen pain occurred predominantly was 21-40 years about 56% of cases.

<b>Sex</b>	<b>No. of cases</b>	<b>Percentage</b>
Male	19	38
Female	31	62

Table 2: Sex incidence

Female sex group was predominantly involved 31 cases 62%. However we cannot draw any conclusion upon these findings.

<b>Duration</b>	<b>No. of patients</b>	<b>Percentage</b>
More than 2 months	26	52
More than 3 months	10	20
More than 4 months	6	12
More than 6 months	3	6
More than 10 months	2	4
More than 1 year	2	4
More than 5 years	1	2

Table 3: Pain duration

In all patients of chronic abdomen pain, the symptom was mostly pain. It was noticed in 50 cases. Hence study comprised too mainly of pain more than 2 months with very few cases of more than 6 months of chronic abdominal pain.

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Prior surgery	No. of cases	Percentage
Not done	36	72
Done	14	28

Table 4: Prior surgery

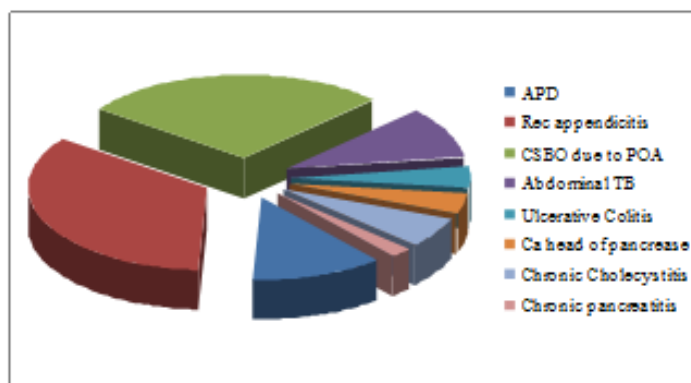
In this study group patients previously underwent surgery is 14 (28%). 8 cases underwent tubectomy, 3 cases underwent hysterectomies, 2 cases underwent appendicectomy.

Diagnosis	No. of cases	Percentage
Acid peptic disease	6	12
Recurrent appendicitis	17	34
Chronic small bowel obstruction due to post-operative adhesions	14	28
Abdominal Tuberculosis	5	10
Ulcerative Colitis	2	4
Carcinoma head of pancreases	2	4
Chronic Cholecystitis	3	6
Chronic pancreatitis	1	2

Table 5: Clinical Diagnosis

$\chi^2=40.240$ ; P value 0.000, Statistically significant.

Majority of cases was that our study shows there were 6 acid peptide disease cases, 17 Recurrent appendicitis, 14 chronic small bowel obstruction due to post op adhesions, 5 abdominal tuberculosis, 2 ulcerative colitis, 2 Carcinoma head of pancreas, 3 chronic cholecystitis, 1 chronic pancreatitis, so of variety of pathologies can cause chronic abdominal pain. Recurrent appendicitis followed by chronic small bowel obstruction due to post op adhesions. These 2 categories together constituted 62%.



**Graph 1: Clinical diagnosis**

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In present study 17 cases clinically diagnosed as recurrent appendicitis out of which 10 were confirmed diagnosis, 7 cases were negative. Hence accuracy of clinical diagnosis for appendicitis in this study was 58.8%.

14 cases diagnosed clinically had chronic small bowel obstruction due to post-operative adhesions, 13 were confirmed to be correct. 1 of them turned to be negative; this case found to be recurrent appendicitis. Hence accuracy of clinical diagnosis for chronic small bowel obstruction due to post-operative adhesions was 74%.

A clinical diagnosis of abdominal tuberculosis was made in 5 cases of which all were correct that is shown to be having tubercular peritoneum.

A clinical diagnosis acid peptic disease was made in 6 cases of which all were negative, later 4 cases shown to be recurrent appendicitis, 2 cases normal study. Hence accuracy of clinical diagnosis for APD was nil (0%).

2 case of ulcerative colitis diagnosed clinically later 1 case found to be negative that is shown to be had recurrent appendicitis, 1 case normal study.

$\chi^2 = 46.080$ , P value 0.000, Statistically significant.

UGI endoscopy	No. of patients	Percentage
Not done	17	34
Done but negative	33	66

Statistically significant for UGI endoscopy  $\chi^2 = 5.120$ ; P value 0.024

Colonoscopy	No. of patients	Percentage
Not done	48	96
Done but negative	2	4

Table 6: Endoscopic diagnosis

Statistically significant for colonoscopy  $\chi^2 = 42.320$ ; P value 0.000.

Endoscopic study involves both upper gastrointestinal endoscopy and lower gastrointestinal endoscopy. There were also done wherever they are applicable. UGI endoscopy done in 33 patients and found to be negative. LGI endoscopy done only in 2 patients and found to be negative.

Diagnosis	No. of cases	Percentage
Recurrent appendicitis	16	32
Post op adhesions	13	26
TB peritoneum	5	10
Secondaries in liver	4	8
Retroduodenal mass	1	2
Chronic cholecystitis	1	2
Normal study	10	20

Table 7: Laparoscopic Diagnosis

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Laparoscopy was successfully performed in all 50 cases.

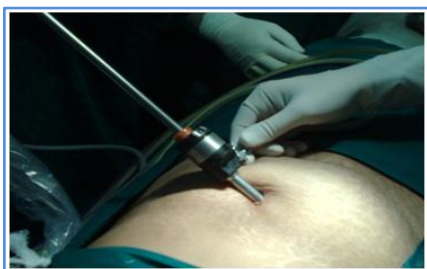
In 10 cases no abnormality was detected in the abdominal cavity. Out of which in 3 cases appendicectomies done for which clinically diagnosed recurrent appendicitis. Later HPE report found to be normal study but improved symptomatically.

Second most common diagnosis made laparoscopically was chronic small bowel obstruction due to post-operative adhesions (14). It is a common phenomenon for adhesions to develop following an abdominal surgery or any abdominal inflammatory conditions. But in our study it was found that there were totally 14 cases of post-operative adhesions of which 13 cases were correct post-operative adhesions. 1 turned to be recurrent appendicitis in a 35 year old lady who underwent tubectomy 6 years back. Out of 13 cases, 8 cases underwent tubectomy, 3 cases underwent hysterectomy, 2 cases underwent appendectomy. In all these patients' adhesions found at previously operated site to anterior abdominal wall and small bowel loops causing chronic small bowel obstruction.

It is interesting to know that there were 14 patients who had previous abdominal surgery of which 13 (92.8%) had adhesions, while 1 (7.1%) had no adhesions and that patient later diagnosed recurrent appendicitis.

In one case 73 year old male patient, who had underwent appendicectomy 40 years back, now had presented with chronic small bowel obstruction features on diagnostic laparoscopy found to be had post-operative adhesions causing chronic small bowel obstruction.

In one case 35 year old female patient, who had underwent tubectomy done 7 year back. Now patient suspected to have chronic small bowel obstruction features, but on diagnostic laparoscopy found to have recurrent appendicitis.



**Fig. 1: Inspecting peritoneal cavity**



**Fig. 2: Laparoscopic Appendicectomy**



**Fig. 3: Ports for laparoscopic Cholecystectomy**

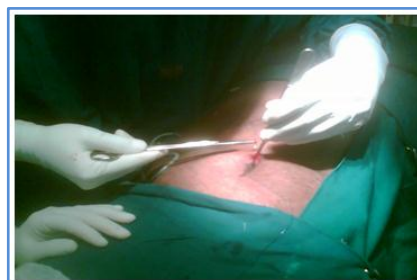


**Fig. 4: Laparoscopic Cholecystectomy applying clips over the cystic duct**

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**Fig. 5: Laparoscopic Adhesiolysis**



**Fig. 6: Closing Port Incision**

Procedure	No. of cases	Percentage
Appendicectomy	19	38
Adhesiolysis	13	26
Biopsy	10	20
Cholecystectomy	1	2
Not done	7	14

**Table 8: Laparoscopic Procedure**

In our study most common procedure done is appendicectomy in 19 cases (38%), out of 19 cases 11 cases (57.9%) in male and 8 cases (25.8%) in females. Next common procedure done adhesiolysis in 13 cases (26%), out of 13, 12 cases (38.7%) in females and 1 case (5.3%) in males. Biopsy taken in 10 cases, out of 10 cases, 5 cases (26.3%) in males and 5 cases (16.1%) in females. Cholecystectomy done in 1 case, in female patient (3.2%). Negative laparoscopy in 7 cases (14%), out of 7 cases, 5 cases (10%) in females and 2 cases (4%) in male. Diagnostic procedures done in 10 cases (20%). Therapeutic procedures done in 33 cases (66%)

Result	No. of cases	Percentage
Chronic inflammation	17	34
Tuberculosis	5	10
Metastatic adenocarcinoma	4	8
Hodgkins lymphoma	1	2
Normal study	3	6
Not done	20	40

**Table 9: Histopathological Examination**

In our study histopathological examination done in 30 cases (60%), out of 30 cases, 27 cases (54%) showed positive result. 3 cases (6%) showed normal study most common HPE result is chronic inflammation in 17 cases.

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Out of 17 cases, 16 cases from appendicectomy cases, 1 case from cholecystectomy, 5 cases HPE result shows TB (10%) taken from TB peritoneum. 4 cases HPE result shows metastatic adenocarcinoma (8%) taken from liver secondaries, 1 case HPE result shows Hodgkin's lymphoma (2%) taken from retroduodenal mass. 3 cases HPE result shows normal study (6%) of which laparoscopically normal study but clinically suspected recurrent appendicitis which underwent appendicectomy.

Complications	No. of cases	Percentage
Surgical site infection	1	2
Persistent post-operative pain	1	2
Shoulder pain	1	2

Table 10: Morbidity

Out of 50 cases, 40 cases underwent positive laparoscopy. 3 cases developed complications, post-operative wound infection, right shoulder pain, persistent post-operative pain.

**DISCUSSION:** The chronic abdominal pain continues to demand the large portion of the general surgeon's workload.

**AGE AND SEX INCIDENCE:** There were 19 males and 31 females in the study. The age group in the study ranged from 15 years to 73 year. M:F ratio is 1:1.6. Average age is 37 years.

Klingensmith et al<sup>4</sup> reported in a study involving 34 patients an average age is 39 year with the range 21 to 75 years, majority of were women 85%. Velanovich et al<sup>5</sup> in their study involving 100 patients represented average age is 27 years. Thanaponsathronw et al,<sup>6</sup> in their study involving 30 patients of chronic right lower quadrant pain represented average age is 27.5 years. Raymond P et al<sup>7</sup> in a study involving 70 patients represented average age is 42 years.

**PAIN DURATION:** In present study, duration of pain in 50 patients ranges from 2 months to 5 years. Raymond P et al<sup>7</sup> reported in 70 patient pain duration ranging from 3 months to 5 years.

**PRIOR SURGERY:** In present study 14 patients (28%) had h/o previous surgery. Klingensmith et al<sup>4</sup> reported 34 patients had h/o previous surgery.

**CLINICAL DIAGNOSIS:** In present study, 34% of cases were reported with the recurrent appendicitis.

Next most common is chronic small bowel obstruction due to post-operative adhesions (28%).

**ENDOSCOPIC STUDY:** In present study, upper gastrointestinal and lower gastrointestinal endoscopy / colonoscopy was carried out wherever applicable. UGI endoscopy was done in 17 patients (34%) and colonoscopy in 2 patients (4%).



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**LAPAROSCOPIC DIAGNOSIS:** In present study majority of cases diagnosed laparoscopically are recurrent appendicitis cases 16 (32%). Recurrent appendicitis was clinically diagnosed in 17 cases (34%). Out of 17 cases, 10 were diagnosed for recurrent appendicitis and 7 cases were negative. Of which, 2 ulcerative colitis was suspected clinically but later was confirmed as recurrent appendicitis. Laparoscopically, post-operative adhesions were confirmed in 13 cases (96%). Lavonius M et al<sup>8</sup> reported post-operative adhesions in 63% of cases. Tubercular peritoneum was diagnosed laparoscopically in 5 cases (10%), all those 5 cases were clinically suspected as abdominal TB.

Metastasis in liver was diagnosed laparoscopically in 4 cases (8%), out of which 2 cases was diagnosed clinically as chronic cholecystitis and another 2 cases was diagnosed clinically as carcinoma head of pancreases. 1 case (2%) was diagnosed laparoscopically as retroduodenal mass and was diagnosed as chronic pancreatitis.

1 case (2%) diagnosed laparoscopically as chronic cholecystitis and that case clinically diagnosed as chronic cholecystitis only.

In present study, efficacy of diagnostic laparoscopy was 80% and accuracy of diagnostic laparoscopy was 60%. Salky B et al<sup>9</sup> reported, the diagnostic accuracy of laparoscopy for chronic abdominal pain is 70%. Vander Velpen et al<sup>10</sup> reported, the diagnostic efficacy of laparoscopy is 41% for chronic abdominal pain. Klingensmith et al<sup>4</sup> reported chronic abdominal pain as a positive finding was made in 65% of patients. Salky BA et al<sup>11</sup> reported in their study in a chronic abdominal pain group, the etiology was established laparoscopically in 76%.

Raymond P et al<sup>7</sup> reported 55% of adhesions in 70 patients. In present study adhesions report 26%, gall bladder pathology in their study reported 2.8%, in present study gall bladder pathology is 2%.

In present study 20% of patient had normal study. Raymond P et al<sup>7</sup> reported normal study of 14%. Salky B A et al<sup>11</sup> reported normal study of 24%. Vander et al<sup>10</sup> reported of 23% uncertain diagnosis.

**THERAPEUTIC LAPAROSCOPY:** Though laparoscopy was intended basically for diagnostic purpose in majority of the cases a simultaneous laparoscopy therapeutic intervention was performed whenever required and considered feasible by laparoscopy.

**Therapeutic laparoscopy was performed on 33 patients who included;**

- Appendicectomies 19 (38%).
- Adhesiolysis 13 (26%).
- Cholecystectomy 1 (2%).

**Tissue biopsy for pathological confirmation of diagnosis was done in 10 cases namely;**

- Abdominal tuberculosis 5 (10%).
- Secondaries in liver 4 (8%).
- Retroduodenal mass 1 (2%).

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Biopsy was taken in abdominal tuberculosis of 5 cases from peritoneal tubercle, histopathological examination confirmed as tuberculosis. In present study total 20% biopsy taken, Out of which 10% of TB peritoneum. In 4 cases of secondaries in liver biopsy taken, metastatic adenocarcinoma was confirmed. In 1 case of retroduodenal mass histopathological examination confirmed as Hodgkin's lymphoma.

Regarding 3 cases of normal appendectomy performed in our study it was still justifiable because patient was asymptomatic after the surgery and also as Conner et al<sup>12</sup> quotes "during diagnostic laparoscopy for suspected appendicitis if no other pathology is identified the appendix should be removed regardless of gross appearance." This both rules out inflammation by pathological examination and makes the diagnosis of appendicitis less likely if the patient complains of similar pain in the future.

In our study 7 normal looking appendix present, out of which 3 (42%) appendix was removed. Chao k et al<sup>13</sup> in his study concluded that diagnostic laparoscopy is worthwhile for patients with chronic right iliac fossa pain and concurrent appendectomy should be considered in young patients with episodic, well localized symptoms associated with systemic malaise.

In present study no cases required conversion to laparotomy for therapeutic management. Salky B A et al<sup>11</sup> reported no conversion rates. Raymond P. Onders et al<sup>7</sup> in their study of patients had chronic abdominal pain shows no conversion rate to laparotomy. Klingensmith et al<sup>4</sup> in their study reported no conversion rate.

Jonathan et al<sup>14</sup> in their study reported laparoscopy is superior in diagnosing intraabdominal malignancies by taking biopsy and diagnostic yield is high.

Andreollo N A et al.<sup>15</sup> reported in their study Laparoscopy in the diagnosis of intrabdominal diseases in 168 cases reported that peritoneal tuberculosis of 4.8% of cases, lymphoma 10.1% of cases, liver tumor 5.4%.

**HISTOPATHOLOGICAL EXAMINATION:** In our study histopathological examination was done in 30 cases. Out of 30, 20 cases were from therapeutic procedures and 10 were from diagnostic procedures.

Histopathological examination among 20 cases underwent therapeutic procedures.

Nafeh MA et al<sup>16</sup> reported TB peritonitis, suspected from 45% of the biopsy taken, HPE shows 93% of cases granulomas. Tuberculous peritonitis was easily diagnosed by histopathologic and bacteriologic studies of biopsy samples taken at laparoscopy. All patients responded rapidly to antituberculous therapy.

Apaydin B et al<sup>17</sup> in their study of suspected TB peritonitis reported that, TB peritonitis laparoscopy is a special practical benefit in underprivileged areas where high end investigations are not available.

**CONCLUSION:** Laparoscopy is an excellent modality for diagnosing chronic abdominal pain where in spite of the relevant investigations an accurate diagnosis cannot be established is a very common occurrence. Since laparoscopy can effectively visualize almost all the intra-abdominal organs, it was felt that this could be a very useful tool in pin pointing the cause of the abdominal

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pain. Laparoscopy is very safe, quick and effective as a major diagnostic tool in unexplained chronic abdominal pain.

Laparoscopy is a very accurate mode of diagnosing abdominal pain with high sensitivity and specificity. Laparoscopy prevents unnecessary laparotomy for abdominal pain to a significant extent. Diagnostic laparoscopy can be followed up with a simultaneous therapeutic laparoscopic procedure in majority of the cases when required and this prevents laparotomy.

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<u>PROFORMA</u>		
EVALUATION OF ROLE OF LAPAROSCOPY IN CHRONIC PAIN ABDOMEN		
HISTORY:		
Name:	Age:	Sex:
<u>I.P.NO:</u>	Unit:	
Religion		
Occupation:	Address:	Date of Surgery:
Date of Admission:	Date of Discharge:	Date of Expiry:

## I COMPLAINTS:

### PAIN

- Time of onset & Date:
- Mode of onset
- Site of pain
- Shifting of pain
- Migration of pain
- Referred pain
- Character of pain
- Aggravating factors
- White discharge / vaginal bleeding
- Relieving factor

### VOMITING -

- Relation to pain
- Frequency
- Amount
- Colour
- Contents
- Character of the act: Projective, Effortless.

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## BOWELS

- Last evacuation
- Constipated / Normal
- Diarrhoea
- Desentery
- History of passing worms

## DISTENSION

- Duration
- Location
- Relation to pain
- Whether accompanied by borborygmi

## FEVER

- Duration
- Relation to pain
- Character
- Whether associated with chills and rigors
- History of treatment taken if any

## OTHERS

### II. PAST HISTORY

- Diabetes
- Hypertension
- T.B.
- IHD
- Previous surgeries
- Previous H/o jaundice

### Personal

- Diabetic
- Hypertension
- Other

### III. PREVIOUS HISTORY:

Of similar complaints

#### Haemetemesis:

- Colour
- Frequency
- Amount

Treatment for peptic ulcer

Surgery:

Medical

Steroids:

NSAIDS:

Aspirin:

Purgatives:

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## IV. PERSONAL HISTORY

- Diet
- Smoking
- Alcohol
- Menstrual history

## V. FAMILY HISTORY

- Peptic Ulcer
- Tuberculosis

## VI GENERAL EXAMINATION

- General condition
  - Good
  - Fair
  - Bad
  - Appearance
  - Attitude
  - Built and nourishment
  - Level of consciousness
  - Temperature
  - Tongue
  - Rashes on the body
  - Pallor
  - Cyanosis
  - Clubbing
  - Jaundice
  - Lymphnodes
  - Pedal edema

- Pulse
- Blood pressure
- Respiration
  - Rate
  - Rhythm

## VII. Local examination

- Inspection
  - Distension
  - Flanks
  - Contour of the abdomen
  - Movement with respiration – N/
  - Visible peristalsis - +/-
  - Skin

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- Umbilicus	
- Operation scars	
- <u>Hernial orifices</u>	
<b>Palpation</b>	
-Temperature	raised / normal / reduced
-Tenderness-	<u>Localised:</u>
	<u>Generalised:</u>
	Quadrant
	Rebound tenderness
	-
-Mass per Abdomen	-+1-
<b>Percussion</b>	
-Liver dullness	Present/Obliterated
-Free Fluid	Present/Absent

<b>Auscultation</b>	
-Bowel sounds	Normal Hyperactive Absent
<b>Other relevant examination</b>	
-P.R.	
-P.V	
<b>VIII. INVESTIGATION:</b>	
a. Radiological	Plain X-ray abdomen
	Gas under diaphragm
	Paralytic ileus
	Ground glass appearance
	Others
	-CXR
	.
b. <u>Blood</u>	
Hb%	TC
Blood Urea:	RBS/FBS
	•
<u>Serum electrolytes</u>	
c. Urine: Albumin:	
•	Sugar:
	Microscopy:
	Pregnancy test:
d. Diagnostic tap of peritoneal fluid	-Transudate
	-Exudate
	• -
	-Fecal
	-Haemorrhagic
f. Ultrasound abdomen & pelvis	
g. <u>Serology</u> (HIV / HBSAg)	
h. <u>others</u>	

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IX.	DIAGNOSIS (By Laparoscopy)	
	<ol style="list-style-type: none"> <li>1. Recurrent appendicitis</li> <li>2. Post op adhesions</li> <li>3. TB peritoneum</li> <li>4. <del>Secondaries</del> in liver</li> <li>5. <del>Retroduodenal</del> mass</li> <li>6. Chronic <del>cholecystitis</del>.</li> <li>7. Normal study</li> </ol>	
X.	LAPAROSCOPIC SURGICAL PROCEDURE	
	<ol style="list-style-type: none"> <li>1. Appendicectomy</li> <li>2. <del>Adhesiolysis</del></li> <li>3. Cholecystectomy</li> <li>4. Biopsy</li> <li>5. Others</li> </ol>	
	OPERATIVE NOTES	DURATION
XII.	POST OPERATIVE MANAGEMENT:	
	<ul style="list-style-type: none"> <li>- Posture in bed</li> <li>- Intravenous fluids</li> <li>- Blood transfusion</li> <li>- Antibiotics</li> <li>- Other drugs</li> <li>- Gastric aspiration</li> <li>- Oral fluids</li> <li>- Removal of drains</li> </ul>	

XIII:	COMPLICATION	
	1 General	
	-Pulmonary	-Renal
	-Cardiac	- <del>Toxaemia</del>
	-Thrombotic	- <del>Agranulocytosis</del>
	2. Local:	
	-Stitch abscess	-Wound sepsis
	-Intestinal obstruction	-Pelvic abscess
	-Paralytic ileus	-Sub diaphragmatic
abscess	- <del>Faecal</del> fistula	-Biliary fistula
XIV.	TREATMENT OF COMPLICATIONS	
	Cured	
	Improved	
	Worse	
	Otherwise	



# ORIGINAL ARTICLE

## KEY TO MASTER CHART:

SI No.	-	Serial number
I. P. No	-	Inpatient number
DOA	-	Date of admission
DOD	-	Date of discharge
+	-	Positive
-	-	Negative
M	-	Male
F	-	Female
APD	-	Acid peptic disease
CSBD	-	Chronic small bowel obstruction
POA	-	Post-operative adhesions
TB	-	Tuberculosis
Ca	-	Carcinoma
USG	-	Ultrasonogram
UGI	-	Upper gastro intestinal
LGI	-	Lower gastro intestinal
CT	-	Computed tomography
DN	-	Done negative
ND	-	Not done
OP	-	Operative
CI	-	Chronic inflammation
HPE	-	Histopathological examination
MACa	-	Metastatic adenocarcinoma
HL	-	Hodgkins lymphoma
Hosp	-	Hospital

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