

A Prospective Study of Diagnostic Laparoscopy in Patients Presenting with Chronic Abdominal Pain at SBMCH

Muzamil Ahmed A, Santhaseelan RG*

Department of General Surgery, Sree Balaji Medical College & Hospital Affiliated to Bharath Institute of Higher Education and Research, Chennai, Tamil Nadu, India

ABSTRACT

To evaluate the diagnostic and therapeutic value of laparoscopy in chronic abdominal pain. Patients with chronic abdominal pain, undiagnosed and with doubtful diagnosis by routine laboratory and imaging modality were enrolled in this study, their clinical presentation, intra operative findings, various occult etiology and clinical improvement were evaluated in this group, which will improve the awareness and importance of diagnostic laparoscopy among the surgeons. To correlate the laparoscopic findings with clinical and radiographic findings in all patients with chronic non-specific abdominal pain, the various unrevealed etiology for chronic abdominal pain and analyses the accuracy and efficacy of diagnostic laparoscopy in chronic abdominal pain. Studies show endometriosis found in 33% and pelvic adhesion in 24% of patients but no pathology was made out in 33% to 50% of the patient.

Key words: Chronic abdominal pain, Laparoscopic, Pelvic adhesion, Pathology

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Corresponding author: Santhaseelan RG
e-mail ✉: santhaseelan.rg@bharathuniv.ac.in
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INTRODUCTION

Chronic abdominal pain is a common complaint which is difficult to manage by both physician and surgeon. It is the 4th frequent cause of chronic pain syndrome in general population worldwide. Although patients with chronic abdominal pain undergo numerous clinical & radiological diagnostic work up, definite diagnosis still remains a challenge to the surgeon. This affects the patients both physically and psychologically.

With the introduction of the diagnostic laparoscopy new tools has been added to our knowledge. Laparoscopy can identify abnormal findings and improve outcome in majority of the patients with chronic abdominal pain.

Diagnostic laparoscopy also helps the surgeon to decide whether any surgical management is mandatory and also to elicit the signs of inoperability in case of disseminated diseases such as advanced malignancy, tuberculosis etc in which the prodromal symptoms may be chronic abdominal pain.

This study is mainly designed to highlight the significance of laparoscopy in diagnosing the etiology of chronic abdominal pain, impact on the treatment and on post-operative pain relief. It also expresses diagnostic and therapeutic value of laparoscopy in chronic abdominal pain which is a most debilitating illness [1-13].

MATERIALS AND METHODS

This study was conducted in patients presented with abdominal pain more than 3 months whose diagnosis was doubtful or could not be made by our routine physical, laboratory and imaging modalities. Between March 2017 and October 2018, a total number of 105 consecutive patients with chronic abdominal pain were enrolled in this prospective descriptive cross-sectional study. They were recruited from the outpatient clinic of General Surgery Department in Sree Balaji Medical College & Hospital, Chennai in the above said study period.

Inclusion criteria

Age between 15 and 65, Both males and females, Abdominal pain more than 3 months.

Exclusion criteria

Known abdominal malignancy patient, Known psychiatric patient.

After getting consent from the patients, they were thoroughly interrogated and examined including per rectal and per vaginal examination and following investigations were done in all patients.

Complete haemogram with ESR, Blood Sugar, Blood Urea and Serum creatinine, Stool routine, microscopy and occult blood, Urine routine and culture, Plain X-ray abdomen, X-ray chest, Ultrasound abdomen and pelvis, CT abdomen and pelvis, Upper GI endoscopy, Colonoscopy, some patients were subjected to additional investigation

according to symptoms, like Contrast gastrointestinal series, Serology for tuberculosis and Liver function test.

After undergoing thorough preoperative evaluation, their intensity of the pain was assessed by using the Verbal Rating Scale (VRS): the patient is asked to rate their pain on a five-point scale as "none, mild, moderate, severe or very severe". These patients were posted for diagnostic laparoscopy.

Table 1: Distribution of age.

Age	Patient
15-25	33
26-35	38
36-45	14
46-55	11
56-65	9
Total	105
Mean age=34 years	

Table 2: Sex distribution.

Gender	Patient
Male	27
Female	78
Total	105

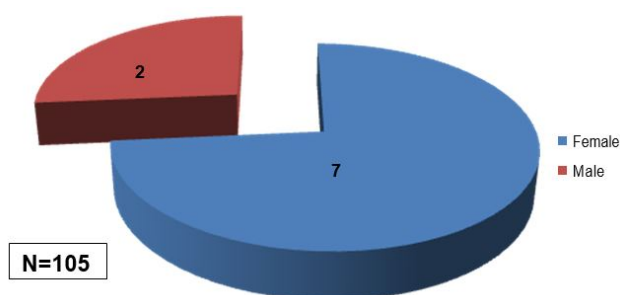


Figure 1: Sex distribution.

Table 3: Site of pain.

Site	Percentage
Diffuse	9 (8%)
Right lower quadrant	69(67%)
Left lower quadrant	8 (7%)
Periumbilical	19(18%)

RESULTS

Age and sex distribution

Most of them in the age group between 26 -35 in adult population (Table 1). Male Vs female ratio was in equal in study population. Females constitute more than thrice compared to male in study population (Table 2 and Figure 1).

Duration and site of pain

Mean=6 months (3-24 months). Most of the patients having pain duration around 3 months, not more than 2 years in our study.

Most of the patients present with the right lower quadrant pain about 67%, particularly in the right iliac fossa region (Table 3 and Figure 2).

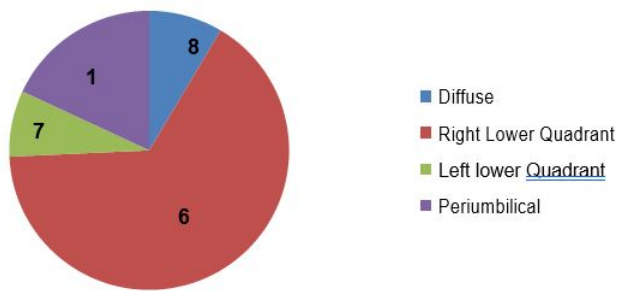


Figure 2: Site of pain.

Intra operative findings

We found that appendicular pathology is the leading cause for chronic abdominal pain of unrevealed etiology and it is about 42%, followed by adhesions in about 21% (Table 4 and Figure 3).

Laparoscopic appendicectomy was done in all the patients with appendicular pathology like inflamed, thickened appendix and localized adhesion with cecum and abdominal wall. All the histopathological reports of appendix specimen showed chronic inflammation. Post operatively they recovered without any complication and all of them were pain free in the follow up of 1 month.

Adhesion was found in 21% (n=22), out of those 22 patients 13 patients had the history of previous surgery. Seven patients underwent LSCS (pfannenstiell scar) and other 6 had omental adhesions in midline scar. Omentum

patients successfully. Other 9 patients who didn't have the history of surgery, had the adhesion of omentum to the anterior abdominal wall with inter bowel loop adhesions, laparoscopic adhesiolysis was done in that patient successfully. Koch's abdomen was diagnosed in 3% (n=3). Intra operative findings were multiple tubercles over the peritoneum, bowel and omentum. In one case we found that flimsy adhesion between the bowel loops and anterior abdominal wall. In all three cases minimal ascitic fluid was present. Omental and peritoneal biopsy was taken, ascitic fluid was also sent for biochemical analysis. The results confirm the tuberculous abdomen. They all were started anti tuberculous drug post operatively.

Malignancy was diagnosed in (n=3) 3% of the patient. One patient had ileo-caecal junction growth and laparoscopic right hemicolectomy was performed. Adnexal mass was found in two patients and hence salphingo- oophorectomy was performed in those two patients.

3% (n=3) of the patients had ventral hernia and underwent hernioplasty. All three patients had small defect in the paraumbilical region with omentum adherent to it. Mesh repair was done in all the three cases. Mean operating time for diagnostic laparoscopy alone is 30 minutes but it combined with therapeutic procedures it was 70 + 30 minutes. Table 5 and Figure 4 represents the management. was adherent to the anterior abdominal wall in the scar region. Laparoscopic adhesiolysis was performed in all

Table 4: Intra operative findings.

Findings	Percentage
Thickened appendix	44 (42%)
Adhesions	22 (21%)
Enlarge mesenteric nodes	14 (13%)
Ovarian cyst	9(8%)
Koch's abdomen	3(3%)
Neoplasia	3 (3%)
Hernia	3 (3%)
Others	3(3%)
No abnormality	4 (4%)

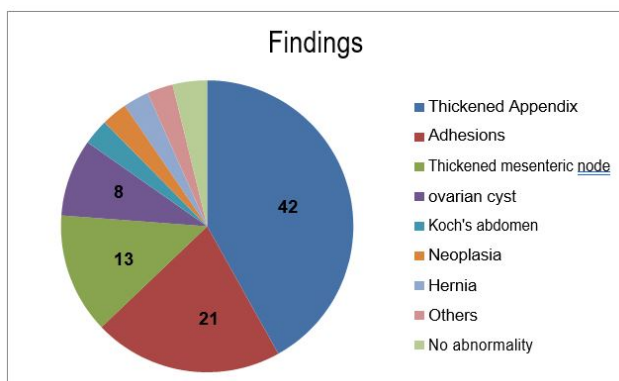
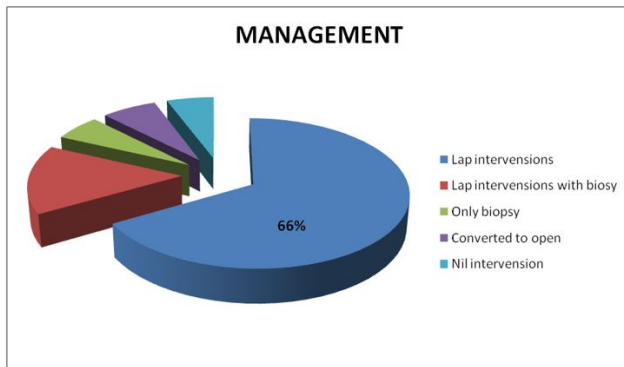


Figure 3: Intra operative findings.

Table 5: Management.

Lap interventions	70(66%)
Lap intervention with Biopsy	16 (15%)
Only biopsy	6(6%)
Conversion into open	7 (7%)
No interventions	6 (6%)

**Figure 4: Management.**

Therapeutic procedure was done in 81% (n=86) of the patients which includes appendicectomy in 42 % of patients, appendicectomy with mesenteric node biopsy in 10% of patients adhesiolysis in 22 %, and hernioplasty in 3% (Table 6 and Figure 5).

13% (n=14) of the patients had enlarged mesenteric nodes in the terminal ileum which was taken up for biopsy and reports showed the features of nonspecific adenitis.

No abnormality is noted in 4% (n=4) of the patients that means negative laparoscopy present in our study. Figure 6 to Figure 9 explains further details of procedure.

Table 6: Interventions done.

Lap interventions	Percentage
Appendicectomy	67 (64%)
Adhesiolysis	22 (21%)
Deroofing of ovarian cyst	9(8%)
Hernia repair	3 (3%)
Others	4(4%)

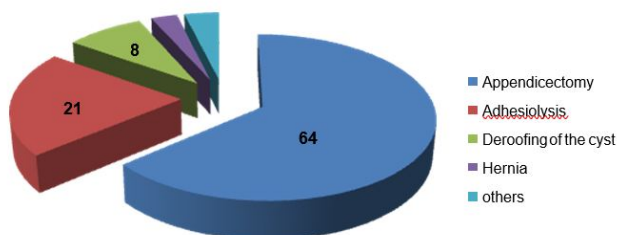
**Figure 5: Interventions done.****Figure 6: Kocher's scar.**



Figure 7: Bowel adhesions to the Kocher's scar.

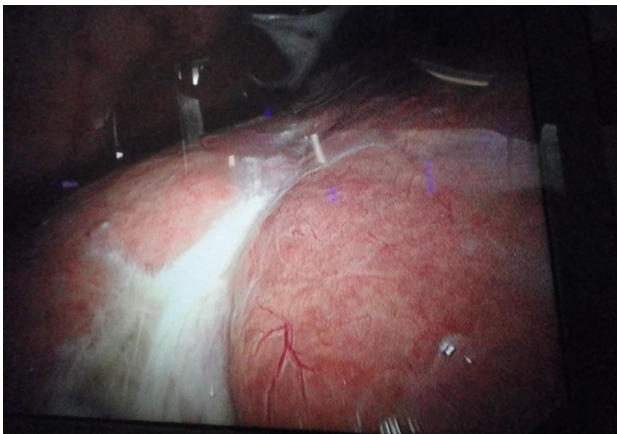


Figure 8: TB Abdomen-Flimsy adhesions.

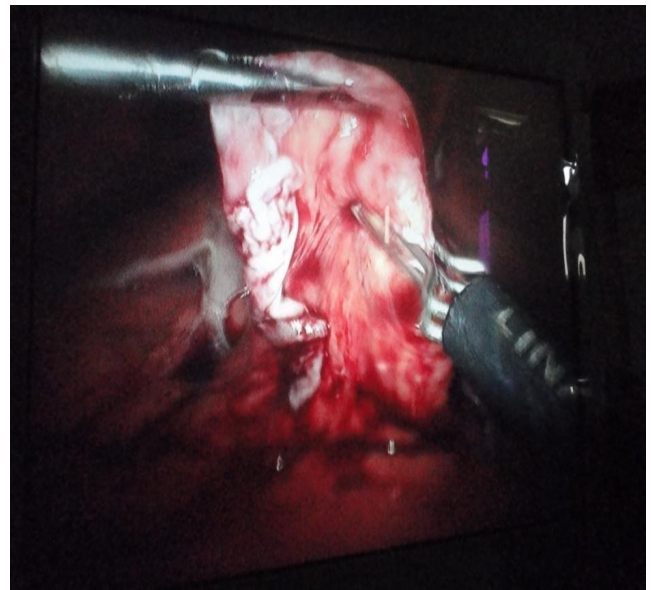


Figure 9: Omental biopsy taken from the same patient.

Post-OP complications

4% (n=4) of the patient had wound infection in the post-operative period which was minimal, and it was managed by appropriate antibiotics and dressing.

No other major complication was occurred in the intraoperative or post-operative period.

Mean Postoperative hospital stay was 2.5 days (Table 7 and Figure 10).

Table 7: Post-op complications.

Post op complication	Percentage
None	101 (96%)
Infection	4 (4%)

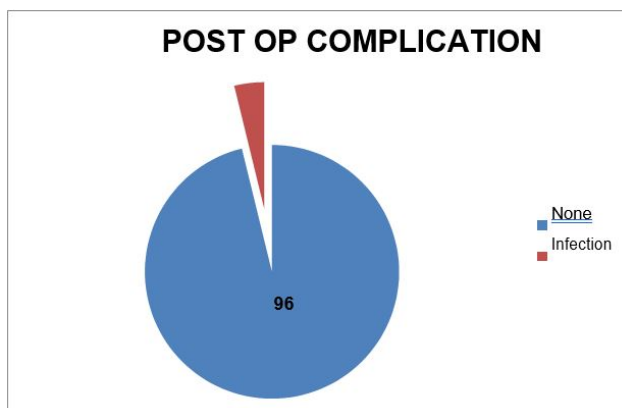


Figure 10: Post-op complications.

Table 8: Pre-OP pain grading.

Grading	Percentage
Mild	14(13%)

Most of the patient had moderate pain which accounts for 74% (n=78) (Table 8 and Figure 11). All patients were observed in the immediate post-operative period for pain perception and amount of analgesic were needed to treat. All of them had the follow up in 1st month and 3rd months. Verbal Rating Scale for pain perception were analysed. At the end of 1st month 80% patients got complete pain relief and at 3rd month 90% got complete pain relief. In the remaining 10% patient there were no changes in pain grading, it may be because of the disease nature. And the patient whose laparoscopic findings were normal they also feel symptom free in the follow up. It may be due to placebo effect (Table 9 and Figure 12).

Moderate	78 (74 %)
Severe	12 (12%)
Very severe	1(1%)

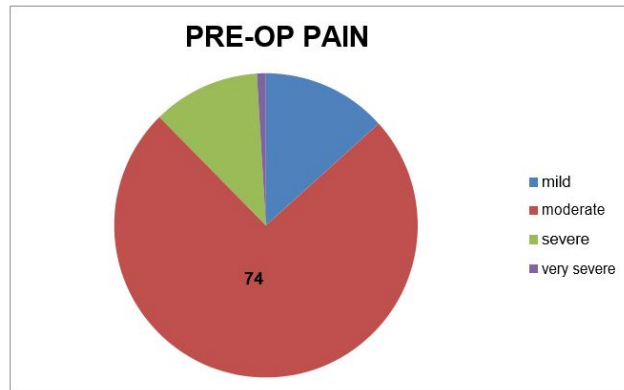


Figure 11: Pre-OP pain grading.

Table 9: Post OP pain relief.

Duration	Positive outcome	Negative outcome
After 1 month	80%	20%
After 3 months	90%	10%

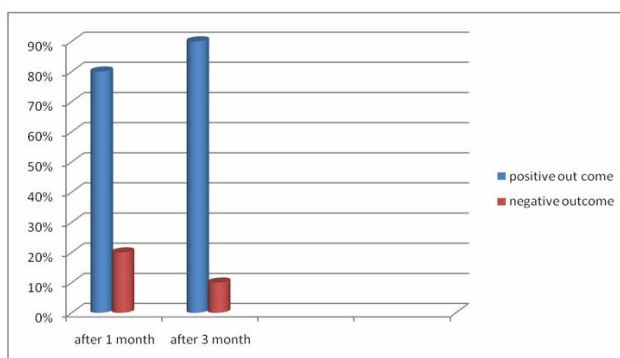


Figure 12: Post OP pain relief.

DISCUSSION

Chronic abdominal pain is defined as continuous or intermittent pain in the abdomen for more than 3 months duration. Diagnosis and treatment of these patients is usually difficult. It is one of the most common surgical symptom and most challenging problem faced by the surgeons and physicians [14]. We evaluated the 105 consecutive patients of chronic abdominal pain with uncertain and doubtful diagnosis laparoscopically. Diagnostic laparoscopy was done in these patients because of uncertain diagnosis, to check for any concomitant pathology and mainly as an interventional procedure.

Diagnostic laparoscopy revealed normal anatomy and no pathological lesion was found in 4% of the patients. The laparoscopic study of Marana and his coworker [15] and Gowri et al. [16] who detected that laparoscopy failed to

detect any abnormalities in 20% of the patients but in this study, it is 4%. Common site for chronic abdominal pain is right lower quadrant (67%) followed by periumbilical region (18%). Common intra operative findings were abnormal appendix (64%) followed by adhesions (22%) which requires appendicectomy and adhesiolysis respectively. Di Lorenzo and colleagues [17] reported frequency of abdominal adhesions in chronic abdominal pain were 18.6% in their study but it is 23% in this study. It was found that pain is in the site of adhesions in 90% of cases, although there was no definite correlation between extent of adhesion and severity of pain [18]. The pain in the adhesion is due to restricted mobility and distension of bowe [19]. 7% of patients required conversion into open techniques this is because of the extensive bowel adhesions. Positive outcome is 80% in the follow up of 1 month and 90% of the patients got complete pain relief in the follow up of 3 months. This figure coincides with Gouda et al. [20] study which reports, "the diagnostic laparoscopy yields 80% positive outcome in evaluation of chronic abdominal pain in the follow up of 2 months."

CONCLUSION

The role of diagnostic laparoscopy in chronic abdominal pain is tremendous which increases our knowledge about various underlying abdominal disorders. Diagnostic laparoscopy can identify abnormal findings and improve the outcome in patients with chronic abdominal pain. However, it should be considered only after a complete diagnostic evaluation has been carried out. It allows effective surgical treatment of many conditions encountered at the time of diagnostic laparoscopy hence

intervention can be done simultaneously. It is a safe and effective tool to establish the etiology of chronic abdominal pain and allows for appropriate interventions.

FUNDING

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ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

- DeBanto JR, Varilek GW, Haas L. What could be causing chronic abdominal pain? Anything from common peptic ulcers to uncommon pancreatic trauma. *Postgraduate Med* 1999; 106:141-6.
- Sackier JM, Berci G, Paz-Partlow M. Elective diagnostic laparoscopy. *AMJ Surg* 1991; 161:326-330
- Ruddock JC. Peritoneoscopy: A critical clinical review. *Surg Clin North Am* 1957; 37:1249-1260.
- https://journals.lww.com/dcrjournal/fulltext/2010/05000/mastery_of_surgery_5th_ed_21.aspx
- Gouda M El-laddan, Emad N Hokkam, The efficacy of laparoscopy in the diagnosis and management of chronic abdominal pain. *J Min access Surg* 2010; 6:95-99.
- Decadt B, Sussman L, Lewis MP, et al. Randomized clinical trial of early laparoscopy in the management of acute non-specific abdominal pain. *J Br Surg* 1999; 86:1383-1386.
- Gelbaya TA, El-Halwagy HE. Focus on primary care: Chronic pelvic pain in women. *Obstetr Gynecol Survey* 2001; 56:757-764.
- Wesselmann U, Czakanski PP. Pelvic pain: A chronic visceral pain syndrome. *Current Pain Headache Reports* 2001; 5:13-19.
- Zucker KA. *Surgical laparoscopy*. Lippincott Williams & Wilkins; 2001.
- https://www.jaypeebrothers.com/pgDetails.aspx?book_id=9789352708451
- <https://www.worldcat.org/title/clinical-gynaecology/oclc/709560667>
- https://journals.lww.com/jlgttd/fulltext/2002/04000/pelvic_pain_diagnosis_and_management_10.aspx
- Barry S. Diagnostic laparoscopy: Surgical laparoscopy & endoscopy. 1993; 2.
- Poulin EC, Schlachta CM, Mamazza J. Early laparoscopy to help diagnose acute non-specific abdominal pain. *Lancet* 2000; 355:861-3.
- Hebbbar S, Chawla C. Role of laparoscopy in evaluation of chronic pelvic pain. *J Minimal Access Surg* 2005; 1:116.
- Gowri V, Krolikowski A. Chronic pelvic pain. Laparoscopic and cystoscopic findings. *Saudi Med J* 2001; 22:769-70.
- Di Lorenzo N, Coscarella G, Lirosi F, et al. Impact of laparoscopic surgery in the treatment of chronic abdominal pain syndrome. *Chirurgia Italiana* 2002; 54:367-78.
- Mahawar KK. Laparoscopic adhesiolysis in patients with chronic abdominal pain. *Lancet* 2003; 361.
- Swank DJ, Van Erp WF, Van Driel OJ, et al. A prospective analysis of predictive factors on the results of laparoscopic adhesiolysis in patients with chronic abdominal pain. *Surg Laparoscopy Endoscopy Percutaneous Techniques* 2003; 13:88-94.
- El-Labban GM, Hokkam EN. The efficacy of laparoscopy in the diagnosis and management of chronic abdominal pain. *J Minimal Access Surg* 2010; 6:95.