



Original Research Article

Role of diagnostic laparoscopy in chronic pelvic pain in females: A study from tertiary care centre in Patna, Bihar

Deepak Pankaj¹, Nitesh Kumar¹, Sweta Muni², Kalpana Singh^{3,*}, Vibhuti Bhushan¹, Bipin Kumar⁴, Nirupam¹, Santosh Kumar¹

¹Dept. of General Surgery, Indira Gandhi Institute of Medical Sciences, Patna, Bihar, India

²Dept. of Microbiology, Indira Gandhi Institute of Medical Sciences, Patna, Bihar, India

³Dept. of Reproductive Medicine, Indira Gandhi Institute of Medical Sciences, Patna, Bihar, India

⁴Dept. of Pathology, Indira Gandhi Institute of Medical Sciences, Patna, Bihar, India



ARTICLE INFO

Article history:

Received 24-08-2021

Accepted 11-09-2021

Available online 17-08-2022

Keywords:

Abdominal pain

Endometriosis

Laparoscopy

Tuberculosis

Uncertain diagnosis

ABSTRACT

Introduction: Chronic pelvic pain in females is one of the most bemusing problems that are faced by doctors in day to day practice as physical signs are nonspecific. Laparoscopy is one of the worthy tools in cases of chronic pelvic pain as not only it establishes the diagnosis but often treatment can be instituted in the same sitting. The present study aimed to evaluate whether diagnostic value of laparoscopy is worth in cases with chronic pelvic pain in females.

Material and Methods: This study was done in the department of General Surgery and Reproductive Medicine at Indira Gandhi Institute of Medical sciences, Patna, Bihar from July 2019 to March 2021. Seventy five female patients were included in this study. The analysis and interpretation of the data were performed using Microsoft excel. The quantitative data obtained were expressed as percentage in tabular form.

Results: The studied patients were in the age group ranging from 15 – 65 years. Most patients 40 % (n=30) complaint of pain in right lower quadrant of abdomen. The most common finding during diagnostic laparoscopy was found to be tubercular pathology (22.67%) followed by pelvic adhesions (18.67%). Other diagnoses were pelvic inflammatory disease, endometriosis, cysts etc.

Conclusion: Diagnostic Laparoscopy is a safe and effective tool to establish the aetiology of chronic pelvic pain and allows for appropriate interventions. It can serve as a time saving and cost effective implement for these patients with uncertain diagnosis.

This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprint@ipinnovative.com

1. Introduction

Chronic pelvic pain is a common condition in females with a major impact on health and day to day activities. In 40-60% of the cases, it is difficult to establish a diagnosis in patients with persistent pain as no clear pathology is seen. In the absence of pathological disease, it is difficult to start any definitive treatment.¹ Laparoscopy has a comprehensive

spectrum, as not only diagnosing the condition but also in contemporary surgical practice as most of the interventions can be done by this technique. Laparoscopy has a definite role if one wants to avoid unnecessary laparotomy and provides diagnostic work up to any elective or planned surgery.^{2,3} Though it has gained popularity but has its own pros and cons and role of laparoscopy is not free of controversies in patient with ill-defined pain. Most of the patients of pelvic pain have been treated with diagnostic laparoscopy followed by adhesiolysis which has gained

* Corresponding author.

E-mail address: drkalpanapunai@gmail.com (K. Singh).

acceptance in gynaecological practice but not very well practiced in mainstream surgical literature and practice remains slow.^{4,5} The burden of abdominal pain is shared by young females in reproductive age group who possess variety of conditions leading to lower abdominal and pelvic pain and inconsistent features of appendicitis where the worth of diagnostic laparoscopy comes into picture. Cases of abdominal tuberculosis present with vague symptoms and are nightmare for the surgeon in clinical practice even after an extensive work up with a series of tests. This results in starting most patients with empirical treatment even without proper evidence of the disease. Diagnostic laparoscopy in these cases can detect nodules in the peritoneal and pelvic cavity and biopsy can be taken from various areas which would confirm the diagnosis. The result would avoid unnecessary over usage of anti-tubercular drugs, drug resistance and side effects faced by patients.⁶ The present study aimed to evaluate whether diagnostic value of laparoscopy is worth in cases with chronic pelvic pain. Also the study has been done with a view to providing a better accompaniment to non-surgical diagnostic modalities for establishing a conclusive diagnosis.

2. Materials and Methods

This study was carried out in the Department of General Surgery and Department of Reproductive Medicine at Indira Gandhi Institute of Medical Sciences (IGIMS), Patna from July 2019 to March 2021 on Seventy five patients. The consent from patients were obtained for the study. Approval from the Indira Gandhi Institute of Medical Sciences ethical committee was duly obtained. (Letter No. 937/IEC/IGIMS/2019)

2.1. Inclusion criteria

1. Female patients between 15 to 65 years.
2. They included those with chronic pelvic pain for more than 6 months duration.
3. Having no obvious organic pelvic pathological lesions on clinical examination.
4. Patients not responding to medical treatment.
5. Patients willing to participate in the study.

2.2. Exclusion criteria

1. Severe/decompensated cardiopulmonary failure.
2. Acute myocardial infarction.
3. Severe peritonitis.
4. Infection of abdominal wall.
5. Severe coagulopathy.
6. Patient unfit for general anaesthesia.
7. Patient who did not give consent.

All patients in this study were subjected to complete preoperative evaluation in the form of medical history

and clinical examination and investigations. The patients were placed in supine position and operated under general anaesthesia. In cases of previous upper midline incision or suspected massive intra-abdominal adhesions, the Veress needle was introduced through the abdominal wall in an area with no scars, most often in the left upper quadrant of the abdomen. After creating pneumoperitoneum, a standard three trocar technique was used (10-mm via umbilical trocar and two 5-mm lateral trocars). A fourth 5-mm trocar was inserted in a few cases. The whole abdominal cavity was inspected carefully starting from the liver, gallbladder, anterior surface of the stomach, and spleen. Fine smooth graspers were used to safely touch the structures and elevating them for further inspection. The small bowel was examined by atraumatic graspers from the ligament of Treitz to the ileocecal valve. The colon including the appendix was inspected in same way as the small bowel. The uterus, adnexa and pouch of Douglas were inspected and the amount of fluid, color, and their sites were noted. Specimen was sent for histopathological diagnosis and therapeutic intervention if needed was done. Post operative hospital stay was between 1 to 7 days and patients were followed at regular intervals (1 week, 1 month and 3 months). The analysis and interpretation of the data were performed using Microsoft excel. The quantitative data obtained were expressed as percentage in tabular form.

3. Results

Seventy five female patients were included in this study. The studied patients were in the age group ranging from 15 – 65 years, with a mean age of 32 years. The maximum number of patients were in age group of 26-35 years (45.33%) followed by patients in age group 36 to 45 years (28%). The patients in age group 46 to 55 years and 15 to 25 years were 10.67% and 9.33% respectively. The least number of patients were in age group of 56-65 years with 6.67% of cases. Majority of females in the study (73.33%) were married. Eight patients in this study (10.67%) had history of previous surgeries with three patients having history of hysterectomy, two patients having history of cholecystectomy and appendectomy each and one patient being operated for intestinal obstruction in the past. Maximum patients had pain of duration between 6 to 9 months (66.67%) followed by pain of duration between 10 to 12 months (14.67%). Very few patients presented with pain of more than two years (5.33%). (Table 1)

Maximum patients (40%) had complaint of pain in right lower quadrant of abdomen followed by diffuse pain all over the abdomen in 24% of patients. Pain was present in left lower quadrant of abdomen in 20% patients while some patients (16%) had presented with pain below umbilicus. Majority (42.67%) of the patients presented with pain of dull aching type. Infertility was present in 39 patients (52%) in the study. (Table 2)

Table 1: Socio-demographic characteristics of studied patients (n=75)

Characters	Value
Age (years) Mean (range)	32(15-65)
Married	55(73.33%)
Unmarried	20(26.67%)
History of previous surgery	
Present	8 (10.67%)
Not Present	67(89.33%)
Duration of pain -	
6 to 9 months	50(66.67%)
10 to 12 months	11(14.67%)
13 to 24 months	10(13.33%)
More than 24 months	4(5.33%)

Table 2: Clinical Spectrum of complaints

Clinical presentation	Numbers (n=75)	Percentage (%)
Site of pain		
Below Umbilicus	12	16
Right lower quadrant	30	40
Left lower quadrant	15	20
Diffuse	18	24
Type of pain		
Dull aching	32	42.67
Sharp	25	33.33
Non specific	18	24
Infertility		
Present	39	52
Absent	36	48
Backache		
Present	26	34.67
Absent	49	65.33

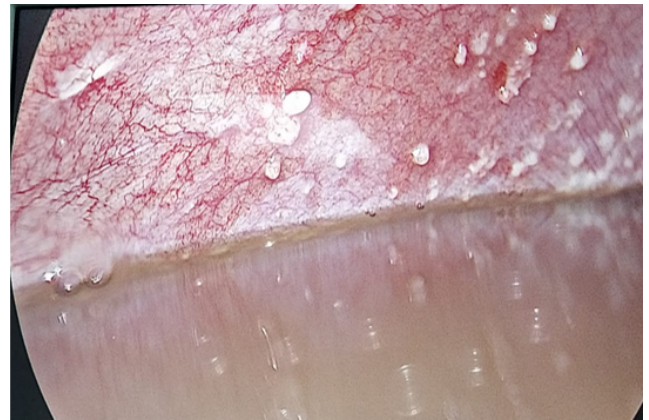
The most common finding during diagnostic laparoscopy was found to be tubercular pathology (22.67%) with peritoneum studded with tubercles and ascetic fluid in pelvis. (Figure 1) The various specimen like tissues, nodes and fluid obtained during laparoscopy were sent for histopathological examination and microbiological tests like Gene Xpert to confirm the diagnosis of tuberculosis and any other pathology. The second most common finding adhesions was present in 18.67 % of cases. No diagnosis could be established in 13.33% of cases where the abdominal cavity and pelvis looked normal. Pelvic inflammatory disease, endometriosis and pathology in the appendix were diagnosed in 12%, 10.67% and 6.67% of cases respectively. Other diagnosis on laparoscopy were fibroid, mesenteric lymphadenitis and hydrosalpinx. Least common finding of ovarian cyst was present in 1 patient (1.33%).(Table 3)

4. Discussion

In the present study, diagnostic laparoscopy was done on seventy-five female patients with most of the females

Table 3: Laparoscopic findings in chronic pelvic pain

Findings	Number of patients (n=75)	Percentage (%)
Tuberculosis	17	22.67
Adhesions	14	18.67
Inconclusive (no diagnosis)	10	13.33
Pelvic inflammatory disease(PID)	9	12
Endometriosis	8	10.67
Appendicular pathology	5	6.67
Fibroid/Mass	4	5.33
Mesenteric Lymphadenitis	4	5.33
Hydrosalpinx	3	4
Ovarian Cyst	1	1.33

**Fig. 1:** Laparoscopic image showing parietal peritoneum studded with tubercles and ascetic fluid in pelvis.

being married and in their third and fourth decade of life. Pain in half of them was of recent duration of 6 to 9 months and few having history of previous surgery in the past. Most of them had dull aching pain and site of pain was right lower quadrant. Tuberculosis (22.67%) and adhesions (18.67%) were the most common cause of pain in these females on diagnostic laparoscopy whereas no diagnosis was established in 13.33% of the patients. Chronic pelvic pain in women is defined as persistent, non-cyclic pain perceived to be in structures related to the pelvis and lasting more than six months.¹¹ Approximately 15% to 20% of women of reproductive age group are affected by chronic pelvic pain(CPP) at some point in their life and in most of the cases, the causes being adhesions and endometriosis.¹² Diagnostic laparoscopy bears great significance in gynaecological practice with main indications being infertility and chronic pelvic pain.¹³ However, various studies across the globe shows diagnosis in these cases of pelvic pain to be unreported in 35% of the patients. The disease may be caused by disorders of reproductive, gastrointestinal, urological and musculoskeletal system, so it may be difficult to identify

Table 4: Comparison of laparoscopic findings by various researchers and present study

Findings	Damyanti S et al ⁷ (2010)	Shahla B et al ⁸ (2013)	Pushpa B et al ⁹ (20 16)	Manjusha A et al ¹⁰ (20 19)	Present study (2021)
Tuberculosis		20%	3.63%	4%	22.67%
Adhesions	40%	9.4%	9.09%	18%	18.67%
Endometriosis	18%	12.9%	18.1%	6%	10.67%
Pelvic inflammatory disease (PID)	20%	9.4%	14.54%	16%	12%
Inconclusive/ Normal diagnosis	10%	34%	25.25%	34%	13.33%

origin of CPP. Sometimes it can be psychoneurological in younger women. So the medical history and physical examination are of utmost importance in these type of patients.¹⁴ Maximum number of patients with pain in this study were in their third and fourth decades of their life with mean age of 32 years. This age of presentation was almost similar to study done by other researchers in the past.⁷ In the present study maximum cases reported with pelvic pain lasting from 6 to 9 months while very few patients reported pain of longer duration. This shows that these types of pain can be so discomforting to the patients that they seek treatment early in the course of the signs and symptoms. There were also findings which were suggestive that CPP may have associated symptoms like backache and may also have association with infertility as there were cases with infertility in present study. The predominant site of pain was right lower quadrant of abdomen and type of pain was dull aching in maximum number of patients. Tuberculosis was the most common finding during diagnostic laparoscopy which was confirmed later by pathological and microbiological findings. The incidence of tuberculosis was more as compared to other studies which can be attributed to the fact that most of the women were from rural areas with lack of access to health care and health education. Poverty, malnutrition and lack of vaccination could be other factors. Incidence of adhesions were quite increased in laparoscopic findings of other studies along with findings of endometriosis. Pelvic adhesions were the second most common finding in present study and also diagnosis of endometriosis was comparable to other studies.⁸⁻¹⁰ (Table 4) Adhesions can be due to history of previous surgery and also there has been studies suggesting that chronic pelvic pain patients developing adhesion can be due to restriction in motility of bowel, distension and constipation.¹⁵ Endometriosis is a disease that often manifests as non specific symptoms. The predominant symptoms of endometriosis is pain in lower abdomen and it is diagnosed commonly in patients who manifest severe pelvic pain of prolonged nature.¹⁶ Pelvic inflammatory disease(PID) was also one of the significant findings on diagnostic laparoscopy in patients with chronic pelvic pain. It was also significant finding in study done by

various researchers. PID affects the uterus, fallopian tubes, and ovaries. It is typically an ascending infection, spreading from the lower genital tract by pathogens ascending from cervix or vagina. The inflammatory damage is due to infection of upper female genital tract and manifests as scarring, adhesions and partial or total obstruction of the Fallopian tubes and can lead to chronic pelvic pain.¹⁷

Other laparoscopic findings in the present study were pathology of appendix, mesenteric lymphadenitis, hydrosalpinx, cysts which are well established causes of pelvic pain. However no diagnosis could be established in 13.33% of cases in which pelvic cavity appeared to be normal. Medical management (pharmacologic therapy) should be aimed at such patients for symptomatic relief. Pelvic floor physical therapy has been proposed as a treatment for chronic pelvic pain. It supports cite benefits for diagnosis and treatment.¹⁸ But further management is considered if there is pelvic floor tenderness. Behavioral health measures should be a critical component for treating women with chronic pelvic pain, regardless of the underlying cause. One treatment strategy with promising result aimed at these patients is a mixture of cognitive psychotherapy and physiotherapy, mentioned to as somatocognitive therapy.¹⁹ Laparoscopy should be the main modality of diagnosing cases of chronic pelvic pain in females which are non responsive to medical therapy. The additional worth of doing laparoscopy can be in the fact that any therapeutic or definitive procedure can be done in the same sitting thus saving time.

5. Conclusion

Diagnostic laparoscopy can identify abnormal findings and improve the outcome in patients with chronic pelvic pain. However, it should be considered only after a complete diagnostic evaluation has been carried out. It allows the effective surgical treatment of many conditions encountered at the time of diagnostic laparoscopy.

6. Limitations

All the patients underwent anaesthesia in this study thus leading to unintentional associated risks. Of all the patients

in this study, diagnosis with laparoscopy was not established in 10 patients. Various pathologies present in the retro peritoneum causing pain in lower abdomen are relatively difficult to diagnose with diagnostic laparoscopy.

7. Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

8. Source of Funding

None.

References

1. The LUNA Trial Collaboration. A randomised controlled trial to assess the efficacy of Laparoscopic Uterosacral Nerve Ablation (LUNA) in the treatment of chronic pelvic pain: The trial protocol [ISRCTN41196151]. *BMC Womens Health*. 2003;3(1):6. doi:10.1186/1472-6874-3-6.
2. Berci G. Elective and emergent laparoscopy. *World J Surg*. 1993;17(1):8–15. doi:10.1007/BF01655697.
3. Easter DW, Cuschieri A, Nathanson LK, and MLJ. The utility of diagnostic laparoscopy for abdominal disorders. Audit of 120 patients. *Arch Surg*. 1992;127(4):379–83. doi:10.1001/archsurg.1992.01420040021002.
4. Klingensmith ME, Soybel DI, Brooks DC. Laparoscopy for chronic abdominal pain. *Surg Endosc*. 1996;10(11):1085–7. doi:10.1007/s004649900245.
5. Schietroma M, Carlei F, Altiglia F, Carloni A, Mattucci S, Agnifili A, et al. The role of laparoscopic adhesiolysis in chronic abdominal pain. *Minerva Chir*. 2001;56(5):461–5.
6. Arya PK, Gaur K. Laparoscopy: a tool in diagnosis of lower abdominal pain. *Indian J Surg*. 2004;66(4):216–20.
7. Sharma D, Dahiya K, Duhan N, Bansal R. Diagnostic laparoscopy in chronic pelvic pain. *Arch Gynecol Obstet*. 2011;283(2):295–7. doi:10.1007/s00404-010-1354-z.
8. Baloch S, Khaskheli MN, Malik AM. Diagnostic laparoscopic findings in chronic pelvic pain. *J Coll Physicians Surg Pak*. 2013;23(3):190–3.
9. Pushpa B, Pratiksha G, Devika M. Role of diagnostic laparoscopy in chronic pelvic pain. *Int J Reprod Contracept Obstet Gynecol*. 2016;5(4):1152–7. doi:10.18203/2320-1770.ijrcog20160875.
10. Agrawal M, Kolli SN. Role of laparoscopy in diagnosis of Chronic Pelvic Pain. *J Datta Meghe Inst Med Sci Univ*. 2019;14(4):310–4. doi:10.4103/jdmimsu.jdmimsu_172_19.
11. Speer LM, Mushkbar S, Erbele T. Chronic Pelvic Pain in Women. *Am Fam Physician*. 2016;93(5):380–7.
12. Nawrocka-Rutkowska J, Szydłowska I, Ryl A, cwiez SC, Ptak M, Starczewski A, et al. Evaluation of the Diagnostic Accuracy of the Interview and Physical Examination in the Diagnosis of Endometriosis as the Cause of Chronic Pelvic Pain. *Int J Environ Res Public Health*. 2021;18(12):6606. doi:10.3390/ijerph18126606.
13. Raquel T, Cristina LB, Daniela AY. The role of diagnostic laparoscopy in gynaecology. *Sao Paulo Med J*. 2016;134(1):70–3.
14. Brichant G, Deneff M, Tebache L, Poismans G, Pinzauti S, Dechenne V, et al. Chronic pelvic pain and the role of exploratory laparoscopy as diagnostic and therapeutic tool: a retrospective observational study. *Gynecological Surg*. 2018;15(13):1–7.
15. Duffy DM. Adhesion controversies: pelvic pain as a cause of adhesions, crystalloids in preventing them. *J Reprod Med*. 1996;41(1):19–26.
16. Ricci G, Castelpietra E, Romano F, Lorenzo GD, Zito G, Ronfani L, et al. Case-control study to develop and validate a questionnaire for the secondary prevention of endometriosis. *PLoS One*. 2020;15(3):1–14. doi:10.1371/journal.pone.0230828.
17. Ross J, Guaschino S, Cusini M, Jensen J. European guideline for the management of pelvic inflammatory disease. *Int J STD AIDS*. 2017;29(2):108–14.
18. Tu FF, Holt J, Gonzales J, Fitzgerald CM. Physical therapy evaluation of patients with chronic pelvic pain: a controlled study. *Am J Obstet Gynecol*. 2008;198(3):272.e1–e7.
19. Linda MS, Mushkbar S, Erbele T. Chronic pelvic pain in Women. *Am Family*. 2016;93(5):380–7.

Author biography

Deepak Pankaj, Assistant Professor

Nitesh Kumar, Associate Professor

Sweta Muni, Assistant Professor

Kalpna Singh, Professor and Head

Vibhuti Bhushan, Professor

Bipin Kumar, Professor and Head

Nirupam, Senior Resident

Santosh Kumar, Senior Resident

Cite this article: Pankaj D, Kumar N, Muni S, Singh K, Bhushan V, Kumar B, Nirupam, Kumar S. Role of diagnostic laparoscopy in chronic pelvic pain in females: A study from tertiary care centre in Patna, Bihar. *Panacea J Med Sci* 2022;12(2):409–413.