



Role of Diagnostic Laparoscopy in Chronic and Relapsing Abdominal Pain

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Abstract

Background: Diagnostic laparoscopy is now accepted as the preferred primary approach to many disease processes. Chronic abdominal pain is a very common condition presenting to a general, surgical practices. **Objective:** This study was aimed to determine the scope of diagnostic Laparoscopy in indeterminate case of chronic & relapsing abdominal pain. **Methods:** This clinical study was conducted in the Department of Surgery, Sir Salimullah Medical College & Mitford Hospital, Dhaka, Bangladesh during the period from September 1998 to September 2000. A total of 40 patients aged between 10-70 years of both sex with laparoscopy in chronic and relapsing abdominal pain. All the patients included in this study based on selection criteria and compiled in a protocol approved earlier. After the routine diagnostic work up and failing to reach a conclusive diagnosis, all the patients were subjected to diagnostic laparoscopy. Based on the findings therapeutic extension of the laparoscopy done to complete some standard procedure like laparoscopic appendectomy or harvesting tissue samples for histopathological or other examination. Statistical analysis of the results was obtained by using window-based computer software devised with Statistical Packages for Social Sciences (SPSS-22). **Results:** Highest number of patients was in 5th, 6th 7th decade and above. Comparatively older age groups are more involved in this study. Male diagnostic laparoscopy is a bit in higher (52.5%) than female groups (47.5%). Out of 8 patients 3 patients (7.5%) suffers from diabetes mellitus, 1 patient (2.5%) suffers from pulmonary T.B. 2 patients (5%) suffer from hypertension, 1 patient (2.5%) suffers from bronchial Asthma and 1 patient is a known case of hypothyroid. The patient who suffers from T.B. gave positive history of taking anti tuberculous drug. Majority of the patients having upper abdominal manifestations. **Conclusion:** Laparoscopic intervention could be performed in a good range of abdominal conditions as a reliable diagnostic as well as therapeutic tool.

Keywords: Adhesiolysis, Appendectomy, Chronic abdominal pain, Diagnostic laparoscopy.

INTRODUCTION

Chronic and relapsing abdominal pain is the most common clinical presentation that affects the patients both physically and psychologically.^[1] In Bangladesh, it is chronic pain syndrome in the general population that

represents of all surgical admissions. Numerous etiologies ranging from organic to functional cause chronic abdominal pain.^[2] The most common organic disorders include intestinal adhesions, biliary causes, and appendicular causes, while functional disorders include irritable bowel disease,

functional dyspepsia, and various motility disorders.^[3] In spite of strong diagnostic workups, most of the patients with chronic abdominal pain did not have specific diagnosis at the end. Many patients remain undiagnosed even after excluding the common disorders by meticulous investigations, and pose a significant diagnostic challenge to the physician. Diagnosis of a disease is based on clinical evaluation and investigation. Patient with chronic abnormal pain where clinical evaluation is a major basis for diagnosis and with-it investigation is a support for confirmation of diagnosis.^[4] The summation of clinical evaluation and investigation may sometime fail to give a confirmatory idea where clinician falls in a puzzling situation. So next step automatically comes i.e diagnostic Laparotomy. Nowadays diagnostic Laparotomy is going to be obsolete due to invention of minimal invasive procedure 'Diagnostic Laparoscopy'.

Objective

This study was aimed to determine the scope of diagnostic Laparoscopy in indeterminate case of chronic & relapsing abdominal pain

MATERIALS & METHODS

This clinical study was conducted in the Department of Surgery, Sir Salimullah Medical College & Mitford Hospital, Dhaka, Bangladesh during the period from September 1998 to September 2000. A total of 40 patients aged between 10-70 years of both sex with laparoscopy in chronic and relapsing abdominal pain. All the patients included in this study based on selection criteria and compiled in a protocol approved earlier. After the routine diagnostic work up and failing to reach a conclusive diagnosis, all the patients were subjected to diagnostic laparoscopy.

Based on the findings therapeutic extension of the laparoscopy done to complete some standard procedure like laparoscopic appendectomy or harvesting tissue samples for histopathological or other examination. Statistical analysis of the results was obtained by using window-based computer software devised with Statistical Packages for Social Sciences (SPSS-22).

RESULTS

Age varies from 10-70 years and above. Highest number of patients was in 5th, 6th 7th decade and above. Comparatively older age groups are more involved in this study [Table I]. Requirement of laparoscopic diagnosis in male & female groups are almost same. But in male diagnostic laparoscopy is a bit in higher (52.5%) than female groups (47.5%) [Figure I]. (20%) patients out of 40 patients having medical problems. Out of 8 patients 3 patients (7.5%) suffers from diabetes mellitus, 1 patient (2.5%) suffers from pulmonary T.B. 2 patients (5%) suffer from hypertension, 1 patient (2.5%) suffers from bronchial Asthma and 1 patient is a known case of hypothyroid. The patient who suffers from T.B. gave positive history of taking anti tuberculous drug [Figure II]. Majority of the patients having in the pain abdominal for 6 months 40% the second majority patients having pain duration is >2 years (27.5%). Smaller number of patients (pt-6, 15%) having short duration of symptom but they have got frequency relapse & remission. Out of 40 cases most common findings are ascities and hepatomegaly. Other findings mention in this table are comparatively lower. There are good number of cases having dual abnormalities according to the findings shown by sonologist. In this series upper abdominal pathology are highlighted in majority of the cases. In spite of that lower abdomen not escaped from the study [Figure IV]. Large

number of patients i.e., 22 patients (55%) were histopathologically proved as malignancy of different organ. Out of this gallbladder malignancy is the largest group. Next to malignancy intraabdominal tuberculosis is second in position (22.5%) [Table IV].

Age	n=40	%
10 years to 20 years	1	2.5
21 years to 30 years	7	17.5
31 years to 40 years	5	12.5
41 years to 50 years	11	27.5
51 years to 60 years	8	20.0
≥ 61 years	8	20.0
Total	40	100.0

Table I: Demonstrate and distribution of the study patients according to Age (n=40)

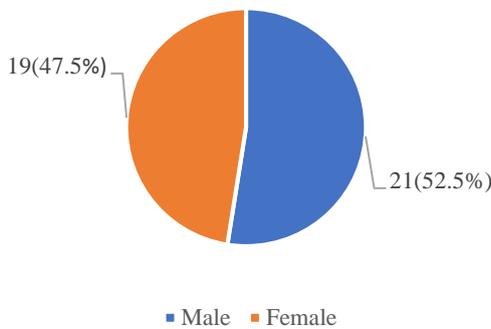


Figure I: Demonstrate and distribution of the study patients according to sex (n=40)

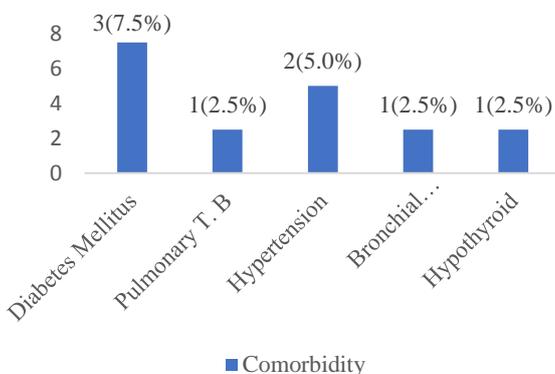


Figure II: Demonstrate and distribution of the study patients according to comorbidity (n=40)

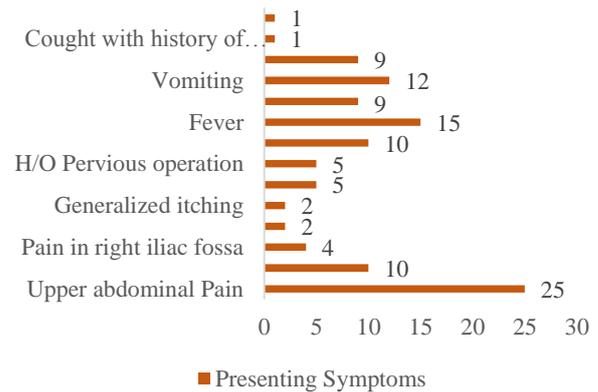


Figure III: Demonstrate and distribution of the study patients according to Presenting Symptoms (n=40)

Duration of Pain	n=40	%
<3 months	6	15
3 months-6months	16	40
7 months - 1 year	3	7.5
1 year - 2 years	4	10
>2 years	1	2.5

Table II: Demonstrate and distribution of the study patients according to Duration of Pain (n=40)

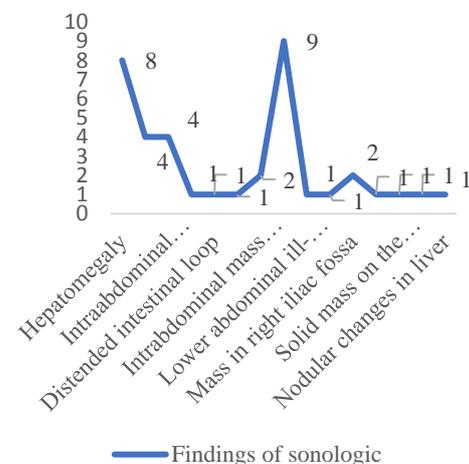


Figure IV: Demonstrate and distribution of the study patients according to findings of sonologic (n=40)

Laparoscope Findings	n=40
Gall Bladder mass	2
Ascities, Gall bladder mass, secondary deposit	7
Deposit in liver, abdominal wall & mesentery	4
Ascities, Gall bladder mass	1
Deposit in liver only, Gall bladder mass	1
Gall bladder mass, secondary deposit	1
Left sided ovarian chocolate cyst adhere to broad ligament, right sided ovarian physiologic cyst (multiple)	1
Ascities, Multiple nodules on liver surface	1
Large, inflamed appendix	1
Unhealthy appendix	2
Multiple nodules on ascending colon, greater omentum	2
Cystic mass from liver surface	1
Nodule on liver surface & abdominal wall	1
Haemorrhagic Ascities, SOL on liver	3
Inflammation of bowel wall, parietal peritoneum and Flimsy adhesion	3
Straw coloured Ascitic fluid, Intraabdominal seedling	2
Mass around Gall Bladder & biliary tree	2
Hard mass around the periduodenal area, head of pancreas enlarged & fixed to other structure.	1
Mass on sigmoid colon, secondary deposit in lymph node & liver	1

Ascities, hardmass formed by small intestine liver and transverse colon	1
Ascities, secondary deposit in abdominal wall liver and omentum.	2
Adhesion between small gut and parietal wall	5

Table III: Demonstrate and distribution of the study patients according to Laparoscope findings(n=40)

Diagnosis	n=40	%
Adenocarciroma of gall bladder with hepatic metastasis	9	22.5
Adenocarciroma of Gall Bladder no metastasis	2	5.0
Chronic liver disease	1	2.5
Chronic inflammatory cells in appendix	1	2.5
Granulomatous inflammation with caseation necrosis	9	22.5
Liver abscess	1	2.5
Clear cell carcinoma of renal origin with hepatic metastasis	1	2.5
Hepatocellular carcinoma	3	7.5
Cholamgiocarciroma	2	5.0
Adenocarciroma of pancreas	1	2.5
Leiomyosarcoma with hepatic metastasis	1	2.5
Carciromatosis peritonei	2	5.0
Adenocarcinoma of large gut	1	2.5
Ovarian cyst	1	2.5
Post-operative adhesion	5	12.5

Table IV: Demonstrate and distribution of the study patients according to Diagnosis (n=40)

DISCUSSION

In the era of high-tech culture of the new millennium very sophisticated systems are coming like Endoscopy, Endoluminal USG, Radio isotope scan, CT scan, MRI etc. Those system are very sophisticated in one hand and in other hand they are very sensitive. All these investigative procedures can give the clinician an indirect evidence, but endoscopic procedure can give a direct evidence. The accuracy of report again depends on the experience and skill of the person who is performing it. These sophisticated procedures are very much costly so many of the patients in our country are so poor that they cannot afford it.^[5] As a result, they are bound to suffer from chronic diseases process due to lack of proper diagnosis. Once upon a time there was a trend to do diagnostic laparotomy when investigative modalities fail to diagnose a disease. But in this time this trend has totally changed and almost no patient goes for diagnostic laparotomy. With the help of telescope, the surgeon can himself focus his idea to the site of suspected pathology and very immediately he may get the positive findings. At the same time, he can collect tissue from the site of abnormality and possibly he will be 100% sanguine of his thought.

In Bangladesh, gynaecological surgeons used to utilize the laparoscopic device for detection of sterility. Till now they are almost confined to this small spectrum. In large scale diagnostic laparoscopy is being utilized in the last decade of 20th century by the general surgeon.^[6] At present it is utilized as a final investigative tool for diagnosis of chronic and relapsing abdominal pain. Present study includes 40 cases who were suffering from long standing and relapsing abdominal pain. Along with abdominal pain they had other symptoms & signs. Somebody had other

medical problems also. The target of this study is how much easily a clinician can overcome his puzzling situation and can give benefit to the patient. The remote consequences are beyond my scope. In this study age distribution varies from 10-70 years. Among these patients' 5th, 6th& 7th decade patients were the majority. What I have seen in this study comparatively older age groups suffer from most of the life-threatening diseases.^[7] So, findings of the older age groups can be compared with the theoretical aspect of several life-threatening diseases. Sex distribution of patients in this study is almost equal. Male patients were 21(52.5%) and female patients were 19 (47.5%). It indicates male and female may suffer equally in chronic and relapsing abdominal pain.

All patients were investigated with ultr of whole abdomen. At this time USG is highly sensitive investigation for detecting intraabdominal pathologies.^[8] Again, it is a person-based investigation who is doing it. If a skilled person is doing it, in that case it can say about accurate findings more than 95% cases. But in case of malignancy, it can say the site of pathology but cannot give any information about modification of tissue architecture. In the majority of patients (25) presented with recurrent upper abdominal pain. 10 patients presented with lower abdominal pain. Most of the cases pain were vague. Many patients having other associated complain like fever (15), anorexia (9), vomiting (12), loss of appetite (9) etc. All patients were advised for base level investigation (Hb%, ESR, Plain X-ray of abdomen and X-ray chest). The evidence which has shown in these basic parameters are really exciting specially Hb% and ESR. Haemoglobin level are lower in 32 (80%) patients in this study. Haemoglobin level directly reflects the patient's own body condition.^[9] It also proofs the patient's

severity of sufferings and duration of sufferings. As patients of this study having chronic & relapsing problems, the haemoglobin level can be correlate with the disease process. High ESR shown in 31 (77.57%) patients.^[10] It also reflects the pattern and severity of sufferings of the patients. We have established on the basis of tissue diagnosis that majority of patients had malignant and tuberculous disease, these high ESR can easily correlate with the disease process. Though the Hb% and ESR signifies something but we can go to a final diagnosis on the basis of these. Plain X-ray of abdomen were normal in 37 cases (92.5%). Only 3 cases (7.5%) I got the abnormal findings. Chest Xray findings were normal in 36 (90%) cases but abnormal findings like pleural effusion in 4 cases (10%).^[11] These evidence does not help much for final diagnosis. Right sided pleural effusion patients were later diagnosed as carcinomatosis peritonei. Several articles published related to this topic in different parts of the world. They e shown how laparoscopy can help widely in the diagnosis of disease. It also helps in taking decision what modalities of treatment to be taken.

Limitations of the Study

This was a clinical study in a single centre with small a sample size. So, the study results may not reflect the scenarios of the whole community. Large scale study is needed for better conclusions.

CONCLUSION

So, in conclusion, from the observation of the present series, it can be said that laparoscopic intervention could be performed in a good range of abdominal conditions as a reliable diagnostic as well as therapeutic tool.

Recommendations

This study can serve as a pilot to a much larger research involving multiple centers that can provide a nationwide picture, validate regression models proposed in this study for future use and emphasize points to ensure better management and adherence.

REFERENCES

1. Saha L. Irritable bowel syndrome: pathogenesis, diagnosis, treatment, and evidence-based medicine. *World J Gastroenterol.* 2014;20(22):6759-6773. doi:10.3748/wjg.v20.i22.6759
2. Choudhury Y, Bremner SA, Ali A, Eldridge S, Griffiths CJ, Hussain I, Parsons S, Rahman A, Underwood M. Prevalence and impact of chronic widespread pain in the Bangladeshi and White populations of Tower Hamlets, East London. *Clin Rheumatol.* 2013;32(9):1375-82. doi: 10.1007/s10067-013-2286-3.
3. BharuchaAE, Chakraborty S, Sletten CD. Common Functional Gastroenterological Disorders Associated With Abdominal Pain. *Mayo Clin Proc.* 2016;91(8):1118-32. doi: 10.1016/j.mayocp.2016.06.003.
4. Dansie EJ, Turk DC. Assessment of patients with chronic pain. *Br J Anaesth.* 2013;111(1):19-25. doi:10.1093/bja/aet124
5. Brady AP. Error and discrepancy in radiology: inevitable or avoidable?. *Insights Imaging.* 2017;8(1):171-182. doi:10.1007/s13244-016-0534-1
6. Kelley WE Jr. The evolution of laparoscopy and the revolution in surgery in the decade of the 1990s. *JLS.* 2008;12(4):351-357.
7. JaulE, Barron J. Age-Related Diseases and Clinical and Public Health Implications for the 85 Years Old and Over Population. *Front Public Health.* 2017;5:335.. doi:10.3389/fpubh.2017.00335
8. Testa AC, Ludovisi M, Mascilini F, Di Legge A, Malaggesi M, Fagotti A, et al. Ultrasound evaluation of intra-abdominal sites of disease to predict likelihood of suboptimal cytoreduction in advanced ovarian cancer: a prospective study. *Ultrasound Obstet Gynecol.* 2012;39(1):99-105. doi: 10.1002/uog.10100.
9. Goodnough LT, Schrier SL. Evaluation and management of anemia in the elderly. *Am J Hematol.* 2014;89(1):88-96. doi:10.1002/ajh.23598
10. Jansen FW, Kapiteyn K, Trimbos-Kemper T, Hermans J, Trimbos JB. Complications of



- laparoscopy: a prospective multicentre observational study. *Br J Obstet Gynaecol.* 1997;104(5):595-600. doi: 10.1111/j.1471-0528.1997.tb11539.x.
- SchöbOM, Schlumpf R, Schmid R, Heinzelmann M, Uhlschmid GK, Largiadèr F. Laparoscopic

treatment of biliary and gastric outlet obstruction. *Surg Laparosc Endosc.* 1995;5(4):288-95.

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