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ORIGINAL ARTICLE

Diagnostic Laparoscopy and its Role in Patients with Chronic Abdominal Pain: Study from a Tertiary Care Hospital

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ABSTRACT

Objective: To find the efficacy of diagnostic laparoscopy and its role in patients with chronic abdominal pain.

Study Design: Observational study

Place and Duration of Study: Department of General Surgery, Ali Fatima Hospital/Abu Umara Medical & Dental College Lahore from 1st July 2021 to 31st March 2022.

Methodology: Seventy patients suffering from chronic abdominal pain were enrolled. An informed written consent was taken from each of them as an approval of participation. The age of the patients was between 20-65 years. Mostly the left side of the abdomen upper-quadrant was opted. Post creation of pneumo-peritoneum a 3 trocar technique which is standardized procedure was applied and a 10mm port through umbilical while two lateral trocars of 5 mm were used. The completed abdominal-cavity was investigated in detail initializing from the liver then gall bladder as well as anterior-surface of stomach and also the spleen. In women uterus as well as Douglas pouch was examined in context to fluid consistency, colour in addition to its site. The specimens were collected and sent to the histopathological lab for analysis.

Results: The mean age of the patients was 36±15.3 years with majority were males with 55.71%. Around 45.71% patient's pain site was at the right lower quadrant while 21.42% had left lower quadrant. The outcomes of laparoscopic investigation showed 27.10% patients to have appendix related pathology, while 19% had bands of adhesion.

Conclusion: Laparoscopic proved to be an effective surgical technique in evaluating exact causes of chronic abdominal pain especially in cases where traditional methods have failed to explain the particular cause.

Keywords: Bowel movement, Laparoscopy, Recurrent, Prolonged, Well-being

INTRODUCTION

Chronic abdominal pain is generally considered as a common complaint for the patients who are seeking primary care and hospital visit. Chronic abdominal pain is defined as persistent abdominal pain for prolonged period of time, usually longer than three months. Recurrent pain normally cause anxiety among patients and laid a negative impact on overall health being of the person both psychologically and physically. Studies from different parts of the world highlighted that, chronic abdominal pain is a prevalent problem all over the world. Reasons and number of factors might vary from region to region but it is generally the most referred health issue to hospitals.[1-3]

Various diagnostic methods have applied for exact and accurate diagnosis of chronic abdominal pain but prove superfluous in finding exact cause. As suggested by studies, a large number of patients remain undiagnosed after months of workup and referred as Unexplained-Chronic-Abdominal-Pain (UCAP).[4-8] Laparoscopy emerged as a rapid, reliable, less invasive and simple method in early twentieth century and revolutionized the world of medical sciences. It not proved a reliable and fast diagnostic method but also prove helpful in intra-abdominal disease analysis.[9]

Laparoscopy can be routinely used by surgeons for the evaluation of abdominal diseases which otherwise difficult to diagnose. Despite of the numerous positive aspects of this procedure, it is not normally and primary choice of many surgeons. This procedure can be more accurate by enhancing visual capacity through new optic- tools and instruments. Advancement allowed better visualization and histological determination.[10-12] Present study was designed to find the effectiveness and outcome of this procedure for the evaluation and correct diagnosis of chronic abdominal pain in tertiary care hospital of Pakistan. Result of the study will prove imperative in early diagnosis of chronic abdominal pain that improves the quality of life of the patient.

MATERIALS AND METHODS

This observational study was conducted at Department of General Surgery, Ali Fatima Hospital/Abu Umara Medical & Dental College Lahore from 1st July 2021 to 31st March 2022. It was a tertiary care based study where ethical clearances were first priority of the research. All patients who were suffering from chronic abdominal pain for more than six months' time and have non-conclusive diagnosis of their condition were included as participants of the study. An informed written consent was taken from reach of them as an approval of participation. The age of the patients was between 20-65 years. Those patients having acute abdominal pain, sepsis, cardiovascular disease, h-pylori, abdominal malignancy or on anti-psychiatric drugs were excluded from the study. There were 70 cases selected in total. Sample size was calculated by using 80% power of test and 95% Confidence interval on WHO sample size calculator. All patients were clinically and medically assessed for surgical fitness before surgery. Patients were positioned supine and operated under General-anesthesia. In patients where a previous incision on upper midline has been performed or in those where there was a suspicion of the massive intra-abdominal adhesions a veress needle was used through abdominal wall choosing the area where no scaring was seen. Mostly the left side of the abdomen upper-quadrant was opted. Post creation of pneumo-peritoneum a 3 trocar technique which is standardized procedure was applied and a 10mm port through umbilical while two lateral trocars of 5 mm were used. The completed abdominal-cavity was investigated in detail initializing from the liver then gall bladder as well as anterior-surface of stomach and also the spleen. Smooth fine conditioned graspers were applied for touching the surface of the st4ructures and also elevating each one of them for further required investigation. An atraumatic grasper was used for examining the small bowel starting from the treitzligaments up-to ileocecal-valve. Similar technique was used for colon and appendix. In women uterus as well as Douglas pouch was examined in context to fluid consistency, color in addition to its site. The specimens were collected and sent to the histopathological lab for analysis. Patients

who required further surgery post diagnosis was underwent another surgery and followed up to 3 months' post operation. All demographic clinical and post-operative findings were detailed and documented. Data was entered and analyzed by using SPSS version 26.0. Chi square test was used for analysis purpose with a p value <0.05 as significant.

RESULTS

The mean age were 36±15.3 years with majority being between 36-55 years. Most of the cases were of males 55.71%. The duration of pain was recorded as 7.1±1.0 months (Table 1). Around 45.71% patient's pain site was at the right lower quadrant while 21.42% had left lower quadrant. There were 17.1% patients with pre-umbilical pain site (Table 2).

The outcomes of laparoscopic investigation showed 27.10% patients to have appendix related pathology, while 19% had bands of adhesion. There were 6% those patients whose diagnosis was not possible even after laparoscopic procedure (Fig. 1). Among the various images of laparoscopic examination, the adhesions of small bowel were also documented (Fig. 2).

The Visual Analogue Score showed a higher mean value at the presentation of the case where as there was an improvement at 1 month as 5.3±0.51. The scoring improved more by three months with a significant value as 4.2±0.49 (Table 3).

Table 1: Distribution of age, gender and pain duration in patients

Variable	No.	%
Age (years)		
20-35	22	31.42
36-55	36	51.42
>55	12	17.14
Mean±SD (years)	36±15.3	
Gender		
Male	39	55.71
Female	31	44.2
Pain duration (months)	7.1±1.0	

Table 2: Pain sites of patients with chronic abdominal pain

Pain site	No.	%
Right lower-quadrant	32	45.71
Right upper-quadrant	2	2.85
Left lower-quadrant	15	21.42
Left upper-quadrant	7	10.0
Diffuse	2	2.85
Pre-umbilical	12	17.1

Table 3: VAS scoring of the patients

VAS score	Mean±SD	P value
Presentation	6.75±0.55	<0.05
1 month	5.3±0.51	
3 month	4.2±0.49	

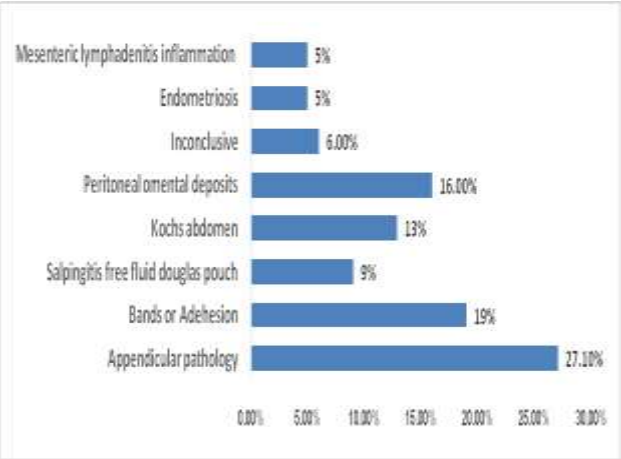

Fig. 1: Outcomes of laparoscopic examination

Fig. 2: Laparoscopic image of small bowel adhesions

DISCUSSION

Laparoscopy is a powerful technique that can easily be employed in the diagnosis of chronic abdominal pain. Many studies suggest its benefits still this technique is not routinely used by surgeons and healthcare practitioners. Current study tried to highlight the importance of this surgical procedure in chronic abdominal pain diagnosis for better outcome and proper disease evaluation. In present study, the mean age of the patients was 36±15.3 years with majority being in an age group between 36-55 years. The duration of pain was recorded as 7.1±1.0 months. Results were consistent with other studies as well.[13-16]

Common laparoscopic findings in present study suggest appendicitis as the main cause of chronic pain (27%) followed by bands of adhesion in 19% of the patients. These pain causes are also similar in already available literature.[14-18] In almost 6% of the patient, no exact cause was found not even after laparoscopy. Another study conducted by Ahmed et al[18] also showed that, in 15% of the patients no exact diagnosis was established. Lingala also observed the same and documented that band adhesion could also be the major cause of chronic abdominal pain after appendicular pathology.

Laparoscopic is an advanced surgical method with different benefits and positive aspects. It can do therapeutic procedure at the same time along with biopsy sample. Moreover, it is less invasive than other method and also provides accurate and reliable results. Advancement in visualization by using different tools and equipment make it even more suitable in diagnosing the cases in which other surgical method failed to explain the route cause.[18-20] Present study suggests that, it could be an effective method in evaluating the cause of abdominal pain even in previously undiagnosed patient.

CONCLUSION

Laparoscopic proved to be an effective surgical technique in evaluating exact causes of chronic abdominal pain especially in cases where traditional methods have failed to explain the particular cause. It can also perform therapeutic procedure at the same time with lesser chances of morbidity.

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