

Study of role of laparoscopy in chronic abdomen

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Abstract

Study regarding role of laparoscopy in chronic abdomen was conducted at Shree Chhatrapati Shivaji Maharaj Sarvopachar Rugnalaya, Solapur during the period from March 2003 to November 2005. Patients of both sex and all age groups were included in the study. A total 30 patients were studied and results were as tabulated and analysed.

In this study, 23 (76%) were females and remaining were (24%) were males. Most of the patients were in group 21-30 years (33%). Maximum female patients were in age group between 21-40 years. Out of 7 male patients, two patients were each in 12-20 years and 51 and above. 9 cases had appendicitis with finding as follows: long kinked appendix with periappendicular adhesions (4 patients), adherent to caecum(1), adherent to terminal ileum(1) & right iliac fossa & periappendicial adhesions (3). We conclude that females constituted maximum patients of chronic abdomen. Maximum age incidence of chronic abdomen was in 21- 30 years. In patients of chronic abdomen, there was poor co-relation between clinical diagnosis and laparoscopic findings. Maximum numbers of patients were in chronic appendicitis group. In this study, diagnostic laparoscopy was found relatively free of complications.

Keywords: chronic abdomen, laparoscopy, chronic appendicitis

1. Introduction

Chronic abdominal pain has always been a constant source of challenge to surgeons. At times, even a battery of investigations does not reveal the cause of pain, and this represents a significant problem in surgical patients. The role of diagnostic laparoscopy has been well documented in chronic abdomen.[1] Diagnostic laparoscopy due to the improvement in instrumentation, not only helps in visualization of the pathology, but also helps in providing operative treatment.

Advanced intra abdominal imaging techniques especially non-invasive ones, viz. ultrasonography, CT scan, MRI and scintigraphy have challenged laparoscopy. However, it is believed that in cases of diagnostic uncertainty; laparoscopy may help to avoid unnecessary laparotomy, provide accurate diagnosis and possibly help to achieve surgical treatment at the same time.[2-7]

The reported over-all diagnostic rate of diagnostic laparoscopy is 99% for abdominal masses, 97% for ascitis, 99% for acute abdominal pain, 70% for chronic abdominal pain, 95% for focal liver disease and more than 80% for retroperitoneal disease. Diagnostic laparoscopy thus should be ideally used with increasing frequency in times of diagnostic dilemma, and when a tissue diagnosis is needed.[8] However the feasibility and the cost effectiveness of this procedure, taking into consideration the time required for it, the requisite expertise and the cost in a public hospital set up is yet to be determined.

The present study was undertaken with this background in mind. The aims of this study were to determine the efficacy of diagnostic laparoscopy: a) in diagnosing an abdominal pathology b) to determine the capability of this procedure to provide

therapeutic benefit to the patient either directly or as an extension to the therapeutic stage and c) aiding in the further treatment of the disease pathology.

2. Material and methods

This study was conducted at Shree Chhatrapati Shivaji Maharaj Sarvopachar Rugnalaya, Solapur. 30 patients were subjected to the procedure of diagnostic laparoscopy with history of recurrent and chronic abdominal pain of unknown origin, lasting longer than 3 months. Study period comprised from March 2003 to November 2005. Cases having duration of pain more than 3 months, either continuous or recurrent were included in the study. In these cases clinical examination, laboratory tests, relevant noninvasive imaging techniques and gynecological examination did not yield accurate diagnosis. Patient who do not consented for the study were excluded. Study was approved by Institutional Ethical committee, Dr. V. M. Govt. Medical College, Solapur. Total 30 patients were studied and results were as tabulated and analysed.

3. Results and Observation

30 cases were analysed in this study. 23 (76%) were females and remaining were (24%) were males. Most of the patients were in group 21-30 years (33%). Maximum female patients were in age group between 21-40 years. Out of 7 male patients, two patients were each in 12-20 years and 51 and above. 9 cases had appendicitis with finding as follows: long kinked appendix with periappendicular adhesions (4 patients), adherent to caecum(1), adherent to terminal ileum(1) & right iliac fossa & periappendicial adhesions (3).

The 2 patients with gynaecological pathologies were one had adhesions between anterior abdominal wall and uterus, adhesions were treated laparoscopically and in another patient multiple ovarian cysts with adhesions was found which was treated with laparoscopic treatment of cysts with adhesiolysis.

Table 1: Sex distribution of cases

Sex	No. of patients (percentage)
Male	7 (24 %)
Female	23 (76%)

Table 2: Age distribution of cases

Age in years	No. of Patients	Percentage (%)
12-20 years	4	13
21-30 years	10	33
31-40 years	8	26
41-50 years	5	16
51 and above	3	10
Total	30	100

Table 3: Co-relation of age and sex distribution of patients undergoing diagnostic laparoscopy

Age in years	Female	Male
12-20 years	2	2
21-30 years	9	1
31-40 years	7	1
41-50 years	4	1
51 and above	1	2
Total	23	7

Table 4: Various pathologies diagnosed on laparoscopy

Sr. No	Organic pathology	No. of Patients	Percentage
1	Appendicitis	9	30
2	Koch' abdomen	8	26
3	Gynaecological Pathology	2	6
4	Adhesions	5	16
5	Others	5	16

Table 5: Laparoscopic findings and treatment

Pathology	No. of Patients	Treatment Conferred		
		Medical	Surgical	
			Laproscopy	Open
Appendicitis	9		9	
Koch's Abdomen	8	6		2
Gynaec	2		2	
Adhesions	5		5	
Others	5		4	1

Therapeutic interventions in patients with pathologies detected

Of the 30 patients, 29 had some pathology identified on laparoscopy, Accounting for the cause of pain. Of these 29 patients, 23 underwent surgical treatment. 20 of 30 patients got the benefit of laparoscopic therapeutic procedure in the same setting as that of diagnostic procedure (66%). All the 6 patients of Kochs Abdomen who did not undergo surgical treatment were given antikocho's treatment.

Complications

None of the patients had any significant complications related to Laparoscopy except for minimal port site subcutaneous emphysema in two patients.

4. Discussion

Chronic recurrent abdominal pain is a challenging symptom requiring the utmost skill on the part of treating physician or surgeon to arrive at a diagnosis. A wide variety of investigations employed together may also prove insufficient in arriving at a diagnosis.

In this study, 30 patients with chronic abdominal pain not diagnosed on standard appropriate investigation to have any specific pathology explaining their pain were subjected to diagnostic laparoscopy, in an attempt to arrive at a diagnosis. In this study, an attempt has been made to evaluate laparoscopy as a diagnostic mode of investigation for chronic abdominal pain. A comparison has been made with other international studies conducted along the same line.[2,9,10]

Age incidence:

In this study patients of all ages and both sexes were selected. Maximum number of patients 10 out of 30 (33%) were in 21-30 years group followed by 31 to 40 year age group in which there were 8 patients (26%). Least incidence was in patients more than 51 years of age i.e. 3 cases out of 30 (10%).

Sex distribution:

Out of 30 cases of chronic abdomen 23 (76%) were female and 7 (23%) were male. In this study, 96% (29) patients had a positive diagnostic laparoscopy. This positive yield of diagnostic laparoscopy is comparable to the study by Karl Miller[2], Barry Salky[9], Lavonius *et al*[10] and Paajanen *et al*[11].

The high yield in this study can be attributed to:

- Better patients selection
- High incidence of tuberculosis in this part of world. In this study Koch's abdomen as been diagnosed in 8 out of 30 patients (26%) While there is no mention of such pathology in any of the other studies conducted in the western hemisphere.
- The mean period of symptoms, i.e. Duration of pain may also play major part. In the study conducted by Karl miller *et al*[2] the mean period of pain is 68.3 weeks (478 days/1.3 years). In this study mean period of pain is 13.8 months (414 days/1.13 years). Miller gives diagnostic accuracy of 90%, where as in our study the diagnostic accuracy is 96%.

In the study conducted by Lavonius *et al*[10] the mean period of pain or average duration of symptom was 3.5 years with diagnostic accuracy of 68%. From the above, one can conclude that lesser the chronicity of pain, more are the chances of arriving at a diagnosis. This point can also be confirmed from other studies where diagnostic laparoscopy has been conducted for chronic abdominal pain, yielding high rate of success and diagnosis.

Table 6: Comparative chart of various pathologies detected with other studies

Pathologies detected	Present study		Lavonius <i>et al</i> [10]		Miller <i>et al</i> [2]		Paajanen H <i>et al</i> [11]	
	No.	%	No.	%	No.	%	No.	%
Appendicitis	9	30			24	40	1	1.3
Koch's abdomen	8	26						
Adhesion	2	6	29	63	19	32	61	85
Gynaec	5	16			5	8	4	5.5
Others	5	16	3	6	8	13		

Thus the incidence of appendicitis in our study was 30% as compared to 40% in Miller study, none in Lavonius and 1.3% in Paajanen *et al* study. The incidence of Koch's abdomen was 26% in our study, while it was nil in other studies, tuberculosis being uncommon in western countries. The incidence of adhesion was 6% in our study, while 63% in Lavonius and 32% in Miller and 85% in Paajanen *et al* study. This can be explained on the basis that out of 36 patients studied by Lavonius, 72% of the patient had undergone previous abdominal or groin surgeries, hence the high number of patients detected in their study.

In this study 29 patients were detected to have organic pathology, of these 23 patients underwent surgical procedure in one form or other. Laparoscopic surgical therapeutics was obtained in 20 patients thus therapeutic laparotomy avoided in 20/23

patients (86%). In the study conducted by Barry Salky[9], out of 265 patients 201 patients were found to have organic pathology. Of these therapeutic laparoscopy was performed in 128 patients i.e. 64%. In this study 29 patients found to have organic pathology and 20 of them underwent therapeutic laparoscopy i.e. 68%. The findings are thus comparable with other published series.[2,9,10]

Hence one can say that laparoscopy is an extremely useful diagnostic as well as therapeutic tool and is good modality by which laparotomy along with its inherent complications may be avoided.

5. Modalities

In this study of 30 patients all the patients had undergone sonological evaluation. 21 sonographies reported normal while 7 sonographies detected some pathology. Of the 21 patients in whom sonographies were deemed normal, organic pathology was detected in 20 patients, which requires treatment. Of the 9 abnormal sonological report, only in one patients finding are completely matches with laparoscopic findings. Thus one can say that though invasive, laparoscopy is an overwhelmingly better diagnostic modality than abdominal ultrasound.[3,12]

Of the 30 patients in this study, a barium meal follow through examination was carried out in 5 patients. Out of which only in 3 patients findings were consistent with laparoscopy findings. Thus one can conclude that laparoscopy is better than barium meal follow through in diagnosis of chronic abdomen.[13,14]

All these patients subjected to diagnostic laparoscopy were monitored for complications like prolonged ileus, parietal wall pain, subcutaneous emphysema or any other complications. However, no significant complications related to laparoscopy were noted except for minimal port site subcutaneous emphysema in two patients and all were put on oral feeds the next day of surgery. Thus, one can conclude that laparoscopy is relatively free of complications and can be definitely rewarding if performed with appropriate operative technique and if performed judiciously.[15,16]

6. Conclusion

Females constituted maximum patients of chronic abdomen. Maximum age incidence of chronic abdomen was in 21- 30 years. In patients of chronic abdomen, there was poor co-relation between clinical diagnosis and laparoscopic findings. Maximum numbers of patients were in chronic appendicitis group. In this study, diagnostic laparoscopy was found relatively free of complications.

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