

Laparoscopic management of right lower abdominal pain

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Abstract

Background: Right iliac fossa pain is a common surgical problem. The most common cause of pain in the right iliac fossa is acute appendicitis. The diagnosis is straightforward most of the times. Occasionally, right iliac fossa pain can present as a diagnostic dilemma to the clinician. Our aim of the study was to share our experiences of laparoscopy for diagnosis & management of patients with pain in right lower abdomen presented either in acute or chronic. **Materials and Methods:** This is a descriptive cross sectional retrospective type study which was carried out at the different hospitals of Cox's Bazar, Bangladesh for the period of one and half years from January 2015 to June 2016. Total 54 patients presented with right iliac fossa pain for different reasons and treated by general surgeons with laparoscopy were included in this study. **Result:** Total 54 patients presented with right iliac fossa pain for different reasons and treated with laparoscopy were included in this study. Among them 23 were male and 31 were female. Average age was 23 years (ranged from 13 to 36 years). The highest incidence (81.84%) was observed in earlier age group (13 to 27 years). In 34 (62.96%) patients Ultrasonography had detected the primary pathology. Leucocytosis was seen 30 (55.56%) patients. During operation we experience on 23 (42.59%) patients as uncomplicated appendicitis (only). 09 (16.67%) patients were diagnosed as appendicitis concomitant with other disease like PID 05 (9.26%), polycystic ovary 04 (7.41%) and mesenteric adenitis 02 (3.70%). 11 (20.37%) patients were suffering with complicated appendicitis like gangrenous, perforated, abscess, generalized peritonitis etc. Surprisingly we experienced tubal pregnancy in 02 (3.70%) unmarried female patients having misleading menstrual history. Among 54 patients 46 (85.18%) patients were managed laparoscopically. And so, conversion rate was only 14.81%. Most common operation was appendectomy both in laparoscopy 43 (79.63%) and open 06 (11.11%). Most patients 42 (77.78%) were recovered completely without any complication. Only 12 (22.22%) patients were experienced some sorts of complications. Most frequent complication was minor SSI 6 (11.11%). Only 3 (5.56%) patients admitted one or two times for recurrent subacute intestinal obstruction that were managed conservatively. **Conclusion:** Laparoscopy has an effective diagnostic accuracy and therapeutic efficacy in the management of patients. It is very useful especially in female patients to diagnose pelvic disease and rule out other pathology. It prevents unnecessary laparotomy in a significant number of cases.

Keywords: Laparoscopy, Right iliac fossa pain, appendicitis

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Introduction

Acute abdominal pain represents the commonest presenting complaint in general surgical ward.

Right iliac fossa pain accounts for between a third and a half of all such admissions, with appendicitis being the most common cause¹. Other causes could be tubal pregnancy, right ovarian torsion, hemorrhage within right ovarian cyst, right ureteric colic or amoebic colitis etc. A correct diagnosis can usually be made by a combination of accurate history and examination along with specific investigations. The diagnosis is straightforward most of the times. Occasionally, right iliac fossa pain can present as a diagnostic dilemma to the clinician².

During the past two to three decades, general surgery has seen a major shift from open to minimally invasive surgery. This has been driven by the development of laparoscopic technology that enables surgeons to perform increasingly complex

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tasks through small incisions. In surgical practice we frequently encounter patients with right lower abdominal pain, who despite frequent routine examination and all available investigations remain undiagnosed. Almost 36% appendices which are removed are unremarkable. Laparoscopy is very sensitive for diagnosis of appendicitis. It not only detects appendicitis but also avoids negative appendicectomies³.

In women of child-bearing age, there are many gynaecological and obstetric causes of right iliac fossa pain which must be considered². Recently, chronic right lower quadrant (RLQ) abdominal pain has drawn more attention because of its high incidence, significant morbidity and significant costs to health care. Patients often complain of pain in the RLQ of abdomen, of months to year's duration for which various diagnostic and therapeutic interventions were carried out with no relief. The vermiform appendix is one of the commonest sites of inflammatory pathology in the abdomen⁴.

Sometimes abdominal wall pain is also common and frequently mistaken for visceral pain. Hence, diagnostic laparoscopy is an important option to explore a patient's abdomen and avoid laparotomy⁵.

We aim of the study was to share our experiences of laparoscopy for diagnosis & management of patients with pain in right lower abdomen presented either in acute or chronic.

Materials and methods

This is a descriptive cross sectional retrospective type study which was carried out at the different hospitals of Cox's Bazar, Bangladesh for the period of one and half years from January 2015 to June 2016. Total 54 patients presented with right iliac fossa pain for different reasons and treated by general surgeons with laparoscopy were included in this study. Patients presented with acute and recurrent or chronic pain, all were included in the study. All patients were routinely investigated with complete blood count, blood sugar, urinalysis and ultrasonography. Data regarding patients' information including age, sex, presenting symptoms, investigation findings, operative finding, operating time, post-operative

complications, and outcome of treatment were obtained from previously recorded form. The abdomen was insufflated under general anaesthesia with carbon dioxide and the laparoscope inserted via umbilical port. The bladder was drained before the procedure to protect it from damage and to facilitate examination of the pelvis, which is particularly important in females. The operative time was calculated as the total time in minutes from placement of umbilical port to the skin closure. Hospital stay was calculated as from the time of admission to the time of discharge. All collected data were compiled, analyzed and finally presented in different tables and diagram.

Result

Age

Total 54 patients presented with right iliac fossa pain with different diagnosis and treated with laparoscopy were included in this study. Among them 23 were male and 31 were female. Average age was 23 years (ranged from 13 to 36 years).

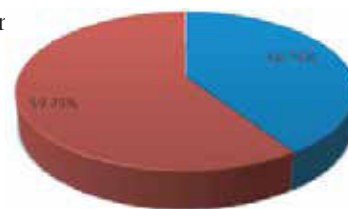
Table-1 : Distribution according to age (n=54)

Age group (years)	Number of patients	Percentages (%)
13-17	12	22.22
18-22	22	40.74
23-27	10	18.52
28-32	6	11.11
>33	4	7.41

The highest incidence (81.84%) was observed in earlier age group (13 to 27 years) and most 22 (40.74%) of them belongs to the age groups of 18-22 years. incidence was lowest in elderly (Table-1).

Sex

Out of total 54 patients who were enrolled in this study 22(40.74%) were male and 32 (59.26%) cases were female = 0.69: 1.



■ Male 22 (40.74%) ■ Female 32 (59.26%)
Figure-1: Distribution according to sex (n=54).

Mode of presentation

Table-II : Distribution according to mode of presentation (n=54)

Mode of presentation	Number of patients	Percentages (%)
Acute pain	39	72.22
Recurrent or Chronic pain	15	27.78
Nausea or vomiting	36	66.67
Fever	25	46.30

Most of the patients 39 (72.22%) were presented with acute pain at the right lower abdomen and reminders were in chronic or recurrent group. 36 (66.67%) patients also complained of nausea or vomiting.

Investigation findings

Table-III : Distribution according to investigation findings

Investigations	Positive findings	Percentages (%)
Lucocytosis (n=54)	30	55.56
CRP (n= 36)	17	47.22
Ultrasonography (n=54)	34	62.96

In 34 (62.96%) patients Ultrasonography had detected the primary pathology. Lucocytosis was seen 30 (55.56%) patients.

Per-operative findings

Table-IV : Distribution of patients according to per-operative findings (n=54)

Per-operative diagnosis	Number of patients	Percentages (%)
Uncomplicated Appendicitis (only)	23	42.59
Appendicitis with Pelvic inflammatory disease (PID)	05	9.26
Appendicitis with Polycystic ovary (PCO)	04	7.41
Appendicitis with Mesenteric lymphadenitis	02	3.70
Complicated Appendicitis (gangrenous, perforated, abscess formation etc.)	11	20.37
Pelvic inflammatory disease (PID)	02	3.70
Adnexal torsion	02	3.70
Tubal pregnancy	02	3.70
Meckel's diverticulum	01	1.85
Ileus due to cong. band compressing ileum	01	1.85
Stromal tumour (GIST) of distal ileum	01	1.85

During operation we experience on 23 (42.59%) patients as uncomplicated appendicitis (only). 09 (16.67%) patients were diagnosed as appendicitis concomitant with other disease like PID 05 (9.26%), PCO 04 (7.41%) and mesenteric adenitis 02 (3.70%). 11 (20.37%) patients were suffering with complicated appendicitis like gangrenous, perforated, abscess, generalized peritonitis etc. Surprisingly we experienced tubal pregnancy in 02

(3.70%) unmarried female patients.

Treatment given

Table-V : Distribution of patients according to treatment or surgery performed (n=54)

Name of operations		Number of patients	Percentages (%)
Laparoscopic (n1=46)	Appendicectomy	30	55.56
	Appendicectomy with peritoneal irrigation	08	14.81
	Appendicectomy with multiple fenestration of ovarian cyst	04	7.41
	Appendicectomy with diverticulectomy	01	1.85
	Salphingoophotectomy	01	1.85
	Untwisting and ovarian cystectomy	01	1.85
	Salphingotomy with peritoneal irrigation	01	1.85
Laparoscopic to open (n2=08)	Appendicectomy with peritoneal toileting	05	9.26
	Appendicectomy with release of cong. Band	01	1.85
	Salphingectomy with peritoneal toileting	01	1.85
	Laparotomy with excision of GIST of ileum	01	1.85

Among 54 patients 46 (85.18%) patients were managed laparoscopically. So, conversion rate was 14.81%. Most common operation was appendicectomy both in laparoscopy 43 (79.63%) and open 06 (11.11%).

Complications and outcome

Table-VI : Distribution of patients according to complications and outcome of treatment (n=54)

Complications and outcome		Number of patients	Percentages (%)
Post-operative complications	Minor SSI	6	11.11
	Wound disruption	4	7.41
	Pelvic abscess formation	1	1.85
	Rec. sub-acute intestinal obstruction	3	5.56
Complete recovery without complication		42	77.78

Among 54 patients most 42 (77.78%) were recovered completely without any complication. Only 12 (22.22%) patients were experienced some sorts of complications. Most frequent complication was Minor SSI 6 (11.11%).

Discussion

Right iliac fossa pain is a common surgical problem. Occasionally, right iliac fossa pain can present as a diagnostic dilemma to the clinician. In our study total 54 patients were included. Among them 23 were male and 31 were female. Average age was 23 years (ranged from 13 to 36 years). The highest incidence (81.84%) was observed in earlier age group (13 to 27 years) and incidence was lowest in elderly.

In the study of Clarke PJ et al⁶. Average age was 25 years (range 16-56 years) and female were common sufferer of right iliac fossa pain also. Similarity was

seen in the study of Tandon M³ et al. But in a study of Kumar S⁷. male was common sufferer.

Though appendicitis and ureteric stone more common in male, female of reproductive age group are commonly suffered from right lower abdominal pain for gynaecological reasons also and seeking treatment. Another reason was that laparoscopy was done more in female because they are more cosmetically concern than similar aged male.

Regarding presentations, most patients 39 (72.22%) presented with acute pain and nausea or vomiting was second most 36 (66.67%) frequent complain, as acute pain of the abdomen is usually associated with nausea or vomiting. Similarity was observed in other studies.

Ultrasonography was the main diagnostic investigation in our study, as it is safe, non-invasive, cost-effective and easily available. In 34 (62.96%) patients Ultrasonography had detected the primary pathology. It is a little bit dissimilar in various studies because sensitivity and specificity of ultrasonography are different for different diseases causing right iliac fossa pain and it is operator dependent.

In our study we found that total 45 (83.33%) patients were diagnosed as appendicitis of them 23 (42.59%) patients diagnosed as uncomplicated appendicitis (only). 09 (16.67%) patients were diagnosed as appendicitis concomitant with other disease like PID 05 (9.26%), PCO 04 (7.41%) and mesenteric adenitis 02 (3.70%). Surprisingly we experienced tubal pregnancy in 02 (3.70%) unmarried female patients, because of their misleading menstrual history. So, most common cause of right iliac fossa pain is appendicitis.

In the study of Clarke PJ et al⁶. Appendicitis (61%) was also the most common cause of right iliac fossa pain. But which was a little bit higher in our study.

Karvande R et al⁵. was done a study in chronic and recurrent lower abdominal pain and the most common finding was chronic appendicular pathology, which was present in 56.1% patients.

Regarding surgical management 46 (85.18%) patients were managed laparoscopically and reminders were converted to open surgery. So, conversion rate was 14.81%. Most common operation was appendicectomy both in laparoscopy 45 (83.33%) and open 06 (11.11%). We removed

appendix to avoid future diagnostic dilemma in 02 cases of PID presented with recurrent lower abdominal pain. But nowadays, most surgeons perform a diagnostic laparoscopy before proceeding to a laparoscopic appendectomy. The Dutch guideline suggests not removing the appendix in case it looks normal⁸. The European Association for Endoscopic Surgery advises not to remove the appendix in case of other intra-abdominal pathology (level IV), but in case of no other intra abdominal pathology the guideline does not make a firm conclusion (level IV)⁹. The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) guideline states that, if no other pathology is identified, the decision to remove the appendix should be based on the individual clinical scenario¹⁰.

In our study out of 54 patients most 42 (77.78%) were recovered completely without any complication. Only 12 (22.22%) patients were experienced some sorts of complications. Most frequent complication was Minor SSI 6 (11.11%). Only 3 (5.56%) patients admitted one or two times for recurrent subacute intestinal obstruction that were managed conservatively.

Conclusion

Laparoscopy has an effective diagnostic accuracy and therapeutic efficacy in the management of patients, who present to us with lower abdominal pain, especially in whom conventional methods of investigations have failed to elicit a cause of pain. It is very useful especially in female patients to diagnose pelvic disease and rule out other pathology. Not only does laparoscopy point to a accurate diagnosis, it has the added advantage that therapeutic intervention can be done at the same sitting. It prevents unnecessary laparotomy in a significant number of cases.

References

1. Rennie ATM, Tytherleigh MG, Theodoropolou K, Farouk R. A Prospective Audit of 300 Consecutive Young Women with an Acute Presentation of Right Iliac Fossa Ann R Coll Surg Engl 2006; 88: 140-143
2. Agrawal A, Govil A, Lakdawala M. Unusual case of right iliac fossa pain: A case report. J Mahatma Gandhi Inst Med Sci 2015;20:94-6.
3. Tandon M, Jain A, Gedam BS, Shah Y, Saxena

- D, Lokhande R, Prasad Y. Role of Laparoscopy in uncertain diagnosis of right lower abdominal pain. *International Journal of Biomedical and Advance Research* 2015; 6(04): 368-370.
4. Sukumaran V, Teli B, Avula S, Pavuluru J, Arakeri S. Chronic right lower abdominal quadrant pain and the vermiform appendix. *Int Surg J.* 2016 Feb;3(1):221-225
5. Karvande R, Kamble R, Kharade M. A study of role of diagnostic and therapeutic laparoscopy in chronic and recurrent abdominal pain. *Int Surg J.* 2016 Aug;3(3):1336-1340.
6. Clarke PJ, Hands LJ, Gough MH, Kettlewell MGW. The use of laparoscopy in the management of right iliac fossa pain. *Annals of the Royal College of Surgeons of England* (1986): vol. 68;68-69.
7. Kumar S. The Role of Diagnostic Laparoscopy in Patients with Chronic Abdominal Pain - A Prospective Study. *Ann. Int. Med. Den. Res.* 2017; 3(1):SG31-SG34.
8. Bakker OJ, Go PM, Puylaert JB, Kazemier G, Heij HA (2010) Guideline on diagnosis and treatment of acute appendicitis: imaging prior to appendectomy is recommended. *Werkgroep richtlijn Diagnostiek en behandeling van acute appendicitis. Ned Tijdschr Geneeskd* 154:A303
9. Sauerland S, Agresta F, Bergamschi R et al (2006) Laparoscopy for abdominal emergencies. *Surg Endosc* 20:14-29
10. Jenneke THH, Hofker HS, Paul MAB, Philip MK, Erik H, Haveman JW. Evaluation of the appendix during diagnostic laparoscopy, the laparoscopic appendicitis score: a pilot study *Surg Endosc* (2013) 27:1594-1600