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Pain Right Iliac Fossa, not everyone has Acute Appendicitis

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ABSTRACT

Objective: To evaluate various causes of acute pain in right iliac fossa (R.I.F) other than acute appendicitis an attempt to adopt measures to minimize the rate of unnecessary appendectomies.

Place of study: Jinnah Hospital & Avicenna Medical College Lahore from April 2008 to August 2010.

Materials and Methods: Out of 353 patients who presented with pain R.I.F, 75 patients of both genders and all ages were included in the study, in whom the diagnosis of acute appendicitis was ruled out by strong history and clinical examination as well as on exploration for suspected acute appendicitis. Out of 75 patients, 42(56%) were diagnosed preoperatively being suffering from pain R.I.F of non appendiceal origin and treated conservatively, while 33(44%) were diagnosed suffering from non appendiceal R.I.F pain on exploration for appendectomy. when appendix was found normal

Results: Acute nonspecific mesenteric lymphadenitis was the most alternative diagnosis 14(18.67) followed by pelvic inflammatory disease 13(17.33%). Right ureteric colic 9(12%), urinary tract infection 7(9.33%), ruptured functional ovarian cyst 6(8%), ruptured ectopic pregnancy 5(6.6%), Meckel's diverticulitis 5(6.67%), non specific abdominal pain 5(6.67%), gastroenteritis 4(5.33%) and amoebiasis 3(4%), Ovarian Cyst Torsion 2(2.66%), others 2(2.66%).

Key words: Pain RIF, acute appendicitis,

INTRODUCTION

Pain right iliac fossa is one of the most common presentations of the patients reporting at the emergency department¹. Nearly 75% of the cases presenting with acute abdominal pain can be attributed to the right lower quadrant of the abdomen². The differential diagnosis of the patients presenting with acute pain R.I.F is not always straightforward and a number of conditions may be responsible for pain at this site. In most of the cases, first diagnosis to be considered is acute appendicitis, which is undoubtedly the most common surgical emergency³. Although appendectomy is the most common emergency general surgical procedure performed in any hospital, its diagnosis still remains difficult and a negative appendectomy rate of 15-30% rising up to 50% in women of reproductive age has been reported⁴. Several authors considered higher negative appendectomy rates acceptable in order to minimize the incidence of perforation⁵.

There is a long list of surgical and medical problems including right ureteric colic, nonspecific mesenteric lymphadenitis, ruptured ectopic gestation, pelvic inflammatory disease, ruptured functional ovarian cysts, amoebiasis, viral gastroenteritis, acute cholecystitis, perforated duodenal ulcer, Crohn's colitis, right basal pneumonia etc which can present an acute pain in R.I.F and can create a diagnostic problem. So the familiarity with the conditions other

than appendicitis presenting as acute pain in R.I.F as well as their management is very important. This study is based on the evaluation of these facts, so that the rate of negative appendectomies leading to financial constraints both on the patients as well as hospitals can be minimized.

MATERIALS AND METHODS

Seventy five patients of both genders and all ages reporting to the emergency department of Jinnah Hospital Lahore between a period of April 2008 to August 2009, with a history of acute pain in right iliac fossa were included in the present study. In these patients the diagnosis of acute appendicitis was ruled out by strong history and clinical examination and or on exploration for suspected acute appendicitis. Detailed history included duration of symptom, location of initial pain, migration of pain, history of anorexia, nausea, vomiting and diarrhea and urinary complaints. Detailed gynecological and obstetrical history was taken. A thorough clinical examination was undertaken in each patient including rectal examination in all cases and vaginal examination in those women where indicated. Baseline investigations were sent and ultrasound of the abdomen and pelvis was done in all cases. Further investigations like urine culture & sensitivity, x-ray KUB, IVU, stool examination, high vaginal swabs for culture and sensitivity and pregnancy tests were advised according to the indications. With the help of history and physical examination, routine and special

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investigations, an attempt to reach a definite diagnosis excluding acute appendicitis was made, and the patients were divided into 3 groups:

Group I: Conservative group - 42 patients (56%). These were the patients in whom conservative treatment was planned and carried out.

GROUP II: Operated group -9 patients (12%) These patients were explored after failure of conservative trial,

Group III: Incidental group - 24 patients (32%)In group II+III patients, conditions other than acute appendicitis were found as a cause of acute pain in the R.I.F on exploration (for appendicectomy) and the appendix was found to be normal. Appendicectomy was performed in all Group II+III pts because they had been operated through Right-Grid Iron incision on suspicion of acute appendicitis.

These patients in group I were managed conservatively by keeping NPO, administering I.V fluids and antibiotics (triple gradually. The patients in each group were discharged when they were symptom free, afebrile, mobile, taking adequate amount of diet and passing stools and flatus. Over all mean hospital stay duration was 4 days, ranging from 24 hours to 8 days.

RESULTS

Out of those 75 patients included in the study. 47(62.67%) were females and 28 (37.33%) were males. Female to male ratio was 1.7:1. Gender distribution in group I, II and 3 is shown in Table-1

Table 1

Gender	Total	Group I	Group II	Group III
Female	47	24 (56.06%)	09 (19.15%)	14(29.79%)
Male	28	18(64.29)	0	10(35.71)

The age ranged from 10 to 46 years, with a mean as of 21 18 years- Age distribution in group 1, II and III is described in table 2.

Table 2:

Age range	Total	Group I	Group II	Group III
5-15	19	10	0	9
15-25	31	13	6	12
25-35	22	17	3	2
35-45	2	1	0	1
	1	1	0	0

Out of 47 females. 29(61.70%) were married and 18 (38.30%) were unmarried. Distribution of marital status in group 1 II and III is given in table 3.

Table 3:

Status	Total	Group I	Group II	Group III
Married	29	16 (55.17%)	08 (21.59%)	05 (17.24%)
Unmarried	18	08 (44.44%)	01 (5.56%)	09 (50.00%)

Thirty six 36(48%) out of all the patients studied with acute right iliac fossa pain of non-appendix origin belong to females of reproductive age group (15-55 years), the age group mostly affected by erroneous diagnosis of acute appendicitis. The commonest presentation of the patients in this study was acute right iliac fossa pain (100%). Apart from right iliac fossa, the pain was localized to other parts of abdomen in 42(56%) cases including epigastrium 7(9.33%),hypogastrium 18(24%), right lumbar region 9(12%) and right hypochondrium 1(1.33%). In 9 (12%) patients the pain started in the peri umbilical region and then shifted to right iliac fossa. The pain radiated from loin to groin in 9(12%) cases and it became generalized in 4(5.33%) cases. Gynecological problem was present in 26 (34.66%) females. On examination, tenderness was present in right iliac fossa in 63(84%) cases, localized tenderness in other parts of abdomen in 41(54.67%). Abdominal distention in 11(14.67%), right renal angle tenderness in 12(16%), adnexal tenderness in 15(20%), rebound tenderness in 40(53.33%), guarding and rigidity in 13(17.33%), shifting tenderness in 4(5.33%) and cervical lymphadenopathy was detected in 3(4%) cases.Total leucocytes count more than 10,000/mm³ was found in 34(45.33%). Urinalysis showed hematuria in 6(8%) and pyuria in 9(12%) cases. X-ray K.U.B showed right ureteric stones in 2(22.22%) patients of right ureteric colic. Abdominal ultrasound was performed in 51(68%) cases of Group 1 and Group II which was not decisive in the in diagnosis of all 9 cases of Group 2 and was positive in 10 cases of Group 1 to make the final diagnosis, but ruled out any serious abdominal or pelvic condition as a cause of acute R.I.F pain in remaining 32 cases. Final diagnosis of the patients in the study is described in table 4.

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Table 4: Final diagnosis in each group

Diagnosis	Total	%age	Group I	Group II	Group III
Nonspecific mesenteric lymphadenitis	14	18.67%	4(28.57%)		10(71.43%)
Pelvic Inflammatory Disease	13	17.33%	7(53.85%)	3(23.08%)	3(23.08%)
Rt. Ureteric Colic	9	12%	9(100%)	-	—
U.T.I	7	9.33%	7(100%)		
Ruptured Ovarian Cyst	6	8%	2(33.33%)	2(33.33%)	2(33.33%)
Gastroenteritis	4	5.33%	4(100%)	-	-
Meckel's Diverticulitis	5	6.67%	—	—	5(100%)
Amebiasis	3	4%	3(100%)	—	-
Ovarian cyst Torsion	2	2.66%	—	2(100%)	—
Acute cholecystitis	1	1.33%	1(100%)	-	
Perforated Duodenal Ulcer	1	1.33%	—	—	1(100%)
Ruptured ectopic pregnancy	5	6.67%	-	3(60%)	2(40%)
Non specific pain abdomen	5	6.67%	5(100%)	-	-

In this study 33(44%) out of 75 cases were operated while remaining 42(56%) were managed conservatively. Out of the operated cases, several patients had more than one complication. The post operative complications observed in the operated cases are shown in Table 5.

Table 5: Postoperative morbidity observed in the present study

Complications	No. of patients	%age
Wound infection	5	15.15
Prolonged ileus	3	9.09
Chest infection	2	6.06

The overall post operative complication rate was 30.39. The overall hospital stay varied from 12 hours to 10 days with a mean of 2.83 days (Table 6). Most of the cases in Group 1, 21(50%) were discharged after 24 hours. Most of the operated patients (group II, III) were discharged on 3rd postoperative day.

Table 6: Hospital stay duration of the patients

Duration	No. Of Patients
12hrs	15
24hrs.	21
48hrs.	3
3 days	17
5 days	9
7 days	6
10 days	4

DISCUSSION

Acute appendicitis, no doubt, is the commonest diagnosis of the patients, presenting with acute R.I.F pain⁶. But a number of intraabdominal, intrapelvic, retroperitoneal, extra abdominal and other conditions can present as acute R.I.F pain and the ultimate goal

of treating R.I.F pain should be to minimize the number of negative explorations and its complications in the form of wound infection⁷, adhesive small bowel obstruction, infertility from fimbrial damage, incisional hernia without increasing incidence of gangrene, perforation, abscess formation and increased morbidity⁸ diagnostic accuracy may be increased by a conservative attitude to explore and in-hospital observation before deciding for exploration⁹. Thirty percent of the patients with documented appendicitis have been atypical presentation and 30% of patients with probable appendicitis will have an alternative diagnosis¹⁰.

Out of 75 patients included in our study, 47(62.67%) were female and 28(37.33%) were males, female to male ratio being 1.7: 1. Out of 47 females, 36(76.60%) belong to age group between 15 to 35 years. This is the age group where a rate of erroneous diagnosis of acute appendicitis is maximum¹¹ and a more intense effort to diagnose acute appendicitis must be made before exploration, keeping in view other causes of acute pain in the R.I.F in this age group. The commonest presentation of the patients in this study was acute R.I.F pain (100%)

Although a raised white cell count is highly sensitive test for acute appendicitis (80-85% sensitivity⁷, it is rendered almost useless by its low specificity and it has a little diagnostic value. So, where the white cell count is in variance with the clinical signs, the latter should take precedence. However in patients with equivocal features of acute appendicitis together with a normal count, the value of serial white cell counts may become important in these cases¹². So, it is suggested that in patients with equivocal clinical findings, clinical observation combined with serial leucocytes count may improve decision power. Paulson et al agreed that although history taking and physical examination remains the

diagnostic corner stone in patients presenting with RIF pain, not all patients will have a classical presentation and further diagnostic investigation are indicated¹³.

High resolution ultrasound with graded compression to shift the bowel gases and soft tissues has been found to improve the accuracy in diagnosing acute Appendicitis. Zeidan et al (1997)¹⁴. Their study on 94 patients showed a specificity of 93%, sensitivity of 74% and accuracy of 87% in the diagnosis of acute appendicitis using graded compression ultrasound and concluded that it helps to avoid unnecessary appendicectomies and reduce negative laparotomies. Ultrasound should be used in all females of reproductive life to make a presumptive diagnosis before exploration for acute R.I.F pain. Non specific mesenteric lymphadenitis was found in 14(18.67%) cases of acute R.I.F pain. It was the commonest condition other than acute appendicitis presenting as acute R.I.F pain in our study. They were all in younger age group(15.25) Age and gender distribution and percentage occurrence was similar as described in literature¹⁵. Meckel's diverticulitis was found in 5(6.67%) cases of acute R.I.F pain. Lau et al (1994)¹⁶ had found Meckel's diverticulitis in 9.38% cases of acute R-LF pain in whom appendix was found normal on exploration The major complication seen after operation was wound infection which occurred in 15.15% cases. This is slightly higher than seen by Khan et al (1997)¹⁷ where wound infection rate was 14% and Bhopal et al (1997)¹⁵. Mean hospital stay duration was 2.83 days ranging from 12 hrs to 10 days in different groups. This is comparative to the studies conducted by Bhopal et al (1997)¹⁸, where mean hospital stay was 2.8 days.

CONCLUSION

A number of gastrointestinal, urological, gynecological conditions can present as acute pain in the right iliac fossa. So. a sound knowledge regarding history taking, clinical examination especially pelvic examination, relevant investigations and the principles of management of these conditions is mandatory before proceeding for any type of surgery for acute pain R.I.F especially for junior residents. A careful implementation of the principles of good history taking and elicitation of physical signs and policy of in-hospital observation. Repeated examination and delay in surgery for patients with equivocal features of acute pain in R.I.F can decrease a negative appendicectomy rate especially in females of reproductive life, thus decreasing postoperative complications of exploration.

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