

A Study of Gynaecological Emergencies Presenting as Acute Appendicitis

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ABSTRACT

Objectives: To assess the frequency of gynaecological emergencies presenting as acute appendicitis among females of child bearing age. **Design:** Descriptive analytical study. **Place and duration of study:** The study was conducted at the surgical unit-II of Sheikh Zayed hospital and postgraduate medical institute Lahore from January 2000 to December 2000. **Patients and Methods:** The study included 105 female patients aged 15-45 presented in accident and emergency department with right iliac fossa pain. Diagnosis was clinical in all cases. Investigations for leukocyte count, pregnancy test and lower abdominal ultrasound scan were used to improve diagnostic accuracy. All diagnosed patients underwent appendectomy and intra-operative findings were recorded. Patients with gynaecological disorder were dealt accordingly. Final diagnosis of acute appendicitis was made on Intra-operative findings and histopathology report. **Results:** There was high frequency of gynaecological disorders simulating acute appendicitis in the age group ranging 15-25 years with mean age 23.1 and standard deviation ± 0.74 . Duration of pain ranges from 12 hours to 4 days. Pain and tenderness in right iliac fossa was found in all patients where as shifting of pain was present in 61% of cases. Total leukocyte count more than 11000 per cubic millimeter was present in 60% cases. Peroperatively acutely inflamed appendix was found in 71.4% ruptured ovarian cyst in 11.4%, right tubal abortion in 0.9% and pelvic inflammatory disease in 4.7% of patients. Histopathological report revealed that in 77.1% of cases appendix was acutely inflamed. Thus out of 105 study subjects who underwent appendectomy, 18(17%) were having gynaecological problems. In 3(2.8%) mesenteric lymph node biopsy was done, which turned out to be chronic nonspecific inflammation. In 9(8.5%) no positive finding could be found preoperatively. The rate of negative appendectomy in our study was 22.9%. **Conclusion:** There is considerable number of young females with gynaecological disorders presenting in emergency as acute appendicitis. Good clinical judgment and routine use of ultrasonography is desirable to reduce the negative rate.

Key words: Acute appendicitis, Negative appendicectomy, Vermiform appendix, Gynaecological disorder.

INTRODUCTION

The vermiform appendix is considered to be a vestigial organ by most; its importance in surgery is due to its propensity for inflammation, which results in the clinical syndrome of acute appendicitis. Acute appendicitis is still one of the most common surgical emergencies. The incidence is increasing in developing countries. Its peak incidence is in twenties. Male to female ratio is 1:1

prior to puberty which becomes 3:2 thereafter.¹

Classical presentation of acute appendicitis is of poorly localized mid abdominal pain which later on shifts to right iliac fossa, associated with anorexia and nausea. Patient experiences tenderness and guarding in right iliac fossa on examination. However this classic history is present in only 50% of individuals and there is difference in presentation according to gender, age and degree of inflammation.² The picture is more confusing in

females of child bearing age where pelvic diseases most often mimic acute appendicitis. Thus a rate of 15 to 30% has been cited in the literature for negative appendicectomies, with highest incidence in females about the age of 20 years.²

Acute appendicitis is notorious in its ability to simulate other conditions, thereby making clinical diagnosis and decision to operate difficult. Overall mortality and morbidity figures rise if a diagnostic delay is made rather than complications of the disease process itself. Thus it is often and reasonably said that to remove a normal appendix, when some other condition, which does not require surgery, is present, is not blameworthy.³

The purpose of present study is to find out the frequency of gynaecological emergencies presenting as acute appendicitis in a teaching hospital of Lahore. The study will also describe the gynaecological disorders which most considerably simulate acute appendicitis.

PATIENTS AND METHODS

The study was conducted at Surgical Unit-II of Sheikh Zayed hospital Lahore from January 2000 to December 2000. The study included 105 female patients aged 15-45 years who presented in accident and emergency department of the same hospital with right iliac fossa pain. Diagnosis was clinical in all cases. A detailed history was taken that included site of initial pain, shifting of pain and its duration. Association of pain with fever, vomiting, anorexia, nausea, loose motions or constipation was noted. History of urinary complaints, vaginal discharge, missed periods or menstrual irregularities was also taken. General physical examination was performed to look for tachycardia, fever, point of maximum tenderness, rebound tenderness, Rovsing's sign. Iliopsoas and obturator tests were carried out. Pervaginum examination was done only in married females with suspicion of pelvic inflammatory disease. Per Rectal examination was done to feel for tenderness on right side in suspected cases.

Laboratory Investigations including leukocyte count, pregnancy test and lower abdominal ultrasound scan was used to improve diagnostic accuracy. All diagnosed patients underwent appendectomy and intra-operative findings were

recorded. Abdomen was opened by muscle splitting incision in 70% of cases and muscle cutting incision in 30% of cases. Patients with gynaecological disorders were dealt accordingly. Final diagnosis of acute appendicitis was made on intra-operative findings and histopathology report.

RESULTS

During study period of one year, a total of 105 female patients were admitted through accident and emergency department of Sheikh Zayed hospital Lahore with pain right iliac fossa. The Mean age of these patients was 25 years. Pain right iliac fossa was present in all cases, However site of initial pain varied; which was 57.1% in right iliac fossa, paraumbilical in 26% and epigastric in 19% of patients. Duration of pain ranged from 12 hours to 4 days. Shifting of pain was present in 61% of patients. Vomiting was a feature in 18% whereas anorexia and nausea was present in 76% of the cases. Pulse rate ranged from 80 to 100 / minute in 59% and more than 100 in 40.9%. Right iliac fossa tenderness was present in 100% of cases, rebound tenderness was present in 80.9%. Psoas, Obturator, and Rovsing signs were present in 26%, 28%, and 36% respectively. Total leukocyte count of more than 11000/cubic millimeter was present in 60% patients. Neutrophilia > 75% was seen in 81% individuals. Sensitivity of ultrasound to detect pathology in right iliac fossa and pelvis ranged from 60% to 70%.

Peroperatively acutely inflamed appendix was found in 71.6%, ruptured ovarian cyst in 11.4%, right tubal abortion in 0.9% and pelvic inflammatory disease in 4.7% of patients. In 3(2.8) cases other intra-abdominal pathology was seen. Mesenteric lymph node biopsy was done, that showed chronic nonspecific inflammation. In 9(8.5%), no positive peroperative finding was present.

There was high frequency of gynaecological disorders simulating acute appendicitis in the age group ranging 15-25 years with mean age 23.1 and standard deviation ± 0.74 . Histopathological report revealed that in 77.1% of cases appendix was acutely inflamed. Thus out of 105 study subjects who underwent appendectomy, 18(17%) were

having gynaecological problems. The rate of negative appendectomy in our study was 22.9%.

Table 1: Age distribution

Age (Years)	Number	Percent
15-20	57	54.2
21-30	31	29.5
31-40	11	10.4
41-45	6	5.7
Total	105	100

Table 2: Presenting symptoms and signs.

Symptoms and signs	Number	Percent
Pain right iliac fossa	105	100
Shifting of pain	61	58.0
Vomiting	19	18.0
Urinary Complaints	10	9.5
Vaginal discharge	9	8.5
Right iliac fossa tenderness	105	100
Rebound tenderness	85	80.9
positive Psoas test	28	26.6
Positive Obturator test	30	28.5
Positive Rovsing test	38	36.1

Table 3: Peroperative findings.

Preoperative findings	Number	Percent
Acutely inflamed appendix	75	71.6
Ruptured Ovarian Cyst	12	11.4
Pelvic Inflammatory disease	5	4.7
Right tubal abortion	1	0.9
Others	3	2.8
None*	9	8.5

*5. 5% of patients turned out to be having inflamed appendix on histopathology.

Table 4: Operative procedures.

Preoperative findings	Number	Percent
Appendectomy	105	100
Marsupialization of cyst	8	7.6
Ovarian cystectomy	4	3.8
Right salpingo-oophorectomy	1	0.9
Drainage of tubo-ovarian abscess	2	1.9
Tuboovarian swabs for culture	3	2.8%
Mesenteric lymph node biopsy	3	2.8%

Table 5: Cited negative appendectomy rates.

Years	Authors	Negative appendectomy rate
1996	Khan et al ⁴	25
1998	Baluch ⁵	14.3
2000	Safar H et al ⁶	30
2001	McDonald et al ⁷	21
2001	Korner H ⁸	20
Present study	Ghazia S	22.9%

Table 6: Gynaecological disorders in patients of suspected acute appendicitis.

Years	Authors	Gynaecological disorders
1996	Khan et al ⁴	22
1998	Baluch ⁵	14
1999	Moberg et al ⁹	47
2001	Ahmed et al ¹⁰	11
Present study	Ghazia S	17%

DISCUSSION

Acute appendicitis is the most common surgical emergency with an overall incidence of 1.5% in males and 1.9% in females.¹¹ It is a disease with varied manifestations, generous overlap with other clinical syndromes and significant morbidity which increases with diagnostic delay. No single sign or symptom or diagnostic test accurately makes the diagnosis of appendicitis in all cases. Negative appendectomies range from 9% to 40% in both sexes. This is especially true in women of 15 to 30 years of age, where other clinical syndromes may mimic acute appendicitis and unnecessary appendectomy may rise to unacceptable levels.¹²

In our study comprising of 105 female patients 83.8% of patients belonged to age group between 15 to 30 years (mean age 23.16 ± 0.74) comparable to the study of Lewis et al thus supporting the view that acute appendicitis is more commonly seen in young patients.¹³ Pain in right iliac fossa was present in all cases. This is similar to study by Adesunkanmi¹⁴, who reported lower abdominal pain in all cases of acute appendicitis. Most constant feature in our study was the migratory pain to right iliac fossa. It was present in

76.25% of cases with acute appendicitis. This correlates with sensitivity and specificity given by Sandy Craig¹⁵ to migrating pain of 80%, in patients with acute appendicitis.

Anorexia is a constant and useful clinical feature of acute appendicitis. In our study anorexia and nausea was substantially present i.e. in 76% of cases. This finding is comparable to study carried out by Marrero *et al.*¹⁶

In our study the cornerstone of diagnosis remained clinical assessment. Although ultrasonography has both sensitivity and specificity 81% and 96% respectively as cited in international studies, but this tool was not of much help in our studies. This might be due to non availability of expert hand as ultrasound examination is operator dependant. Technical expertise and commitment to a thorough examination are essential in obtaining maximum sensitivity which is not provided by junior radiologist at odd hours of emergency. However according to most of the studies^{4, 7}, ultrasound is the diagnostic standard of reference for patients with possible diagnosis of acute appendicitis because of its non-invasiveness, short acquisition time, lack of radiation exposure and potential for diagnosis of other causes of acute abdominal pain in subset of females of child bearing age. The most important diagnostic tool to improve surgical decision making in females of child bearing age is the use of laparoscopy which has been shown to decrease the negative appendectomy rate to 5%⁵; However in our emergency settings, it remains limited because of the lack of expertise in laparoscopy during emergency working hours.

CONCLUSION

In our study the frequency of negative appendectomy was 22.9% with a diagnostic accuracy of 77.1%. It is comparable to international studies and is within acceptable range. Frequency of gynaecological disorders in patients with suspected appendicitis is 17.1%; with maximum occurrence being in age group of 15 to 25 years (Mean 23.1±0.74). The Principal tool of diagnosing appendicitis remained symptoms and signs of the disease. Use of ultrasonography can be of help especially in females to rule out gynaecological causes of pain abdomen.

Early diagnosis and timely management of acute appendicitis could reduce the incidence of perforation and gangrene which in turn results in decreasing associated morbidity and mortality.

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