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Original Research Article

Clinicopathological correlation of acute appendicitis undergoing emergency appendicectomy in a tertiary care hospital of Gujarat: a retrospective study

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ABSTRACT

Background: Acute appendicitis is acute inflammation and infection of the vermiform appendix, which is most commonly referred to simply as the appendix. The aim of this study was to determine the presenting pattern of acute appendicitis and to review the pathological diagnosis.
Methods: This retrospective study was conducted in the general surgery department at tertiary care institute of Gujarat for the period of one year. One hundred patients who were attending department of surgery diagnosed as acute appendicitis were selected for the study. Patient demographics, clinical features, operative findings and histology results were recorded on a special patient proforma.
Results: The most common presenting complaints were abdominal pain (n=100), nausea (n=54), vomiting (n=80) and diarrhoea (n=7). As for clinical signs 100% of the patients in this study had some degree of right iliac fossa tenderness. Open appendicectomy was performed in 62% of the patients and laparoscopic appendicectomy in 38% of the patients. 66% of the patients presented within 24 hours of the onset of symptoms whereas 28% presented 24-48 hours after the onset of symptoms.
Conclusions: Diagnosis of acute appendicitis obvious based on strongly positive clinical presentation. Present study shows that acute appendicitis in India is a disease of young males. On further sub-classification of acute appendicitis, uncomplicated acute appendicitis seems to be the most common. Delayed presentation is associated with greater morbidity.

Keywords: Abdominal pain, Appendicitis, Gujarat, Morbidity

INTRODUCTION

Acute appendicitis is acute inflammation and infection of the vermiform appendix, which is most commonly referred to simply as the appendix. The appendix is a blind-ending structure arising from the cecum. Acute appendicitis is one of the most common causes of abdominal pain and is the most frequent condition leading to emergent abdominal surgery in children. The appendix may be involved in other infectious, inflammatory, or chronic processes that can lead to appendectomy; however, this article focuses on acute appendicitis. Appendicitis and acute appendicitis are used interchangeably.[1] With a general life time risk of 7-8%, the appendectomy accounts for one of the most common operations in general surgery. Post-operative complications after appendectomy include wound infection, intra-abdominal abscess, retrocecal abscess, intestinal perforation with peritonitis, bleeding and adhesions.[2] Appendicitis has always been thought to be a progressive disease, from acute inflammation followed by gangrene and necrosis and finally perforation. In

recent years, there are reports to suggest that the disease can either resolve spontaneously or after antibiotic treatment.[3] Eriksson reported that in his series of 20 patients treated conservatively for clinically diagnosed appendicitis, seven of them developed acute appendicitis within one year of conservative treatment and required surgery.[4]

Acute appendicitis is the most common abdominal surgical emergency, apart from trauma. It may occur at any age, affecting males more often than females, but the majority of patients are between 10 and 40 years old. Typically, the patient has central abdominal pain which may be associated with loss of appetite, nausea and/or vomiting, mild fever and leucocytosis. After a few hours pain is felt in the right lower abdomen.[5] Importance of specific elements in the clinical diagnosis remain controversial diagnosis is mainly clinical. Routine history and physical examination still remain the most practical diagnostic modalities. Absolute diagnosis is only possible at operation and histopathological examination of the specimen. A variety of neoplastic and inflammatory conditions mimic acute appendicitis. The aim of this study was to determine the presenting pattern of acute appendicitis and to review the pathological diagnosis.

METHODS

This retrospective study was conducted in the general surgery department at GMERS Medical College, Vadnagar, Gujarat from March 2017 to April 2018. The ethical clearance was obtained from the institute ethical committee and all the patients was informed prior to the study and written informed consent was taken from all the patients. One hundred patients who were attending department of surgery diagnosed as acute appendicitis were selected for the study.

Inclusion criteria

Patients who were clinically diagnosed as acute appendicitis were included.

Exclusion criteria

Patients having appendicular mass and those who were not willing to participate in the study and patient demographics, clinical features, operative findings and histology results were recorded on a special patient proforma were excluded.

Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2007) and then exported to data editor page of SPSS version 15 (SPSS Inc., Chicago, Illinois, USA).

Descriptive statistics included computation of percentages, means and standard deviations. For all tests, confidence level and level of significance were set at 95% and 5% respectively.

RESULTS

Out of the total of 100 patients studied, 63 were males while 37 were females, with a male (Table 1). The majority of our patients were in the second decade followed by 3rd decade and fourth decade respectively. The most common presenting complaints were abdominal pain (n=100), nausea (n=54), vomiting (n= 80) and diarrhoea (n=7). As for clinical signs 100% of the patients in this study had some degree of right iliac fossa tenderness. Guarding was elicited in 22% of the patients while rigidity was elicited in 2% of the patients (Table 2).

At surgery 69 of appendices patients were apparently inflamed. 2 were perforated and 4 had appendicular abscess whereas in 25 cases faecolith with inflammation was present (Table 3). In this study open appendicectomy was performed in 62% of the patients and laparoscopic appendicectomy in 38% of the patients. 66% of the patients presented within 24 hours of the onset of symptoms whereas 28% presented 24-48 hours after the onset of symptoms. 6% of the patients presented with symptoms more than 48 hours. 55% of the patients were discharged on the 5th day, 6% were discharged on 6th day, 5% on 7th day, 26% on 8th day and 1% on 9th day. 7% had a hospital stay of 10 or more days.

Table 1: Gender wise distribution of study participants (n=100).

Gender	Number	Percentage (%)
Male	63	63
Female	37	37

Table 2: Clinical features among study participants.

Clinical feature	Present	Absent
Abdominal pain	100	0
Nausea	54	46
Vomiting	80	20
RIF tenderness	100	0
Rebound tenderness	85	15
Guarding	22	78
Rigidity	2	98

Table 3: Pathological diagnosis among study participants.

Pathological diagnosis	Number	%
Appendicular abscess	4	63
Appendicular perforation	2	37
Inflamed appendix	69	100
Faecolith with inflamed appendix	25	25
Total	100	100

DISCUSSION

To confirm the diagnosis of chronic appendicitis, surgeons not only require a pathology proof but a series of other criteria as well. That is why surgeons and pathologists don't share a common viewpoint on the case.[6,7] The pathophysiology of recurrent inflammation of the appendix is unclear. In acute appendicitis, it is believed that obstruction of the appendiceal lumen leads to overgrowth of the bacteria. The resultant distension of the appendix causes inflammation, ischaemia and perforation. Some authors speculate that the possible pathophysiology of recurrent appendicitis is either partial obstruction of the appendiceal lumen or the excessive mucus production in the appendix.[8]

In our study male female ratio was found to be 1.57:1 with male predominance which is similar to many of the studies in the West Africa with male predominance.[9] Another study from New Delhi also shows also male predominance.[10]

In our study most common presenting complaints were abdominal pain, nausea, vomiting and diarrhoea. The perforation rate on histology was 2% which is slightly lower than the 5–26% reported in the literature.[11] Colson et al proposed that a delay in presentation of more than 12 h after onset of symptoms increased the perforation rate and an in-hospital delay did not affect the perforation rate.[11] In our study 66% of the patients presented within 24 hours. Most of the appendicectomy were emergency appendicectomy. In the present study, simple acute appendicitis was confirmed intra-operatively in 69 patients and 2 had perforated appendix. These findings were comparable to those reported by Dey et al.[12]

CONCLUSION

Diagnosis of acute appendicitis obvious based on strongly positive clinical presentation. Present study shows that acute appendicitis in India is a disease of young males. On further sub-classification of acute appendicitis, uncomplicated acute appendicitis seems to be the most common. Delayed presentation is associated with greater morbidity.

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