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Original Research Article

Clinical-epidemiological profile of acute appendicitis at tertiary care institute of Bhuj, Kutch: a retrospective study

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ABSTRACT

Background: Acute appendicitis is one of the commonest surgical emergencies in all ages and the importance of specific elements in the clinical diagnosis remains controversial. Present study was performed with an aim to determine the presenting pattern of acute appendicitis and to review the pathological diagnosis.
Methods: Present retrospective study was conducted in 115 patients who had appendicectomy for acute appendicitis at the Department of Surgery, tertiary care institute of Gujarat, India for the period of 1 year. The complaints and physical examination findings of the patients were obtained from their medical files Patient demographics, clinical features, operative findings and histology results were recorded on a special patient proforma.
Results: Out of the total of 115 patients studied, 70 were males while 45 were females. The most common presenting complaints were abdominal pain (n=115), Nausea (n=55), vomiting (n=77) and diarrhoea (n=14). At surgery, 68.6% of appendices were apparently inflamed.1.7% were perforated and 5.2% had appendicular abscess whereas in 24.3% cases faecolith with inflammation was present. Sixty percent of the patients were discharged on the 4th day, 5.2% were discharged on 5th day, 4.3% on 6th day, 25.2% on 7th day and 3.4% on 8th day and 1.7% had a hospital stay of 10 or more days.
Conclusions: Present study shows that acute appendicitis in India is a disease of young males. Hospitalization time was directly associated with the evolutionary phase and increased with the severity of appendicitis.

Keywords: Abdominal pain, Acute appendicitis, Appendicular abscess, Demographics

INTRODUCTION

Acute appendicitis (AA) is one of the commonest surgical emergencies in all ages and the importance of specific elements in the clinical diagnosis remain controversial.[1,2] Epidemiological studies have reported that 10% of AA patients have abdominal pain.[3,4] Negative appendectomies in patients with a preoperative diagnosis of AA comprise 10% of all cases in various series.[5,6] The etiologies for these negative appendectomies include constipation, gastroenteritis, mesenteric lymph-adenectomy, pelvic inflammatory disease, and ovarian torsion or rupture.

The diagnosis of AA is predominantly based on clinical findings. When appendicitis manifests in its classic form, it is easily diagnosed and treated. Unfortunately, these classic symptoms occur in just over half of patients, therefore an accurate and timely diagnosis of AA remains clinically challenging. Delay in diagnosis leads to complications significantly increasing morbidity.[4] although the mortality rate has been vastly reduced, the diagnostic inaccuracy rate of 15% to 20% has remained unchanged in the past century. High rates of negative appendectomy have been reported in females of reproductive age.[5,6] The main factors contributing to this high negative laparotomy rate have been the nonspecific

clinical features of AA. Ultrasound has been proposed as an ideal noninvasive adjunct to diagnosis in suspected appendicitis. The pathophysiology of AA explains why only half of the patients have a classical presentation. A number of nonappendiceal pathologies in the right iliac fossa can mimic appendicitis and a significant number of appendicectomies are being performed for non-appendiceal pathologies. 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 AA.[7,8] The purpose of this study was to determine the presenting pattern of AA and to review the pathological diagnosis.

METHODS

Present retrospective study was conducted in 115 patients who had appendicectomy for AA at the department of Surgery, tertiary care institute of Gujarat, India from August 2017 to July 2018. Ethical approval was obtained from the institutional ethical committee and written informed consent was taken from all of the participants. Inclusion criteria were all ages, both gender and patients clinically diagnosed as AA. Exclusion criteria were patients with appendicular mass and right ureteric/renal colic.

The complaints and physical examination findings of the patients were obtained from their medical files patient demographics, clinical features, operative findings and histology results were recorded on a special patient proforma.

Statistical analysis

The data was coded and entered into Microsoft Excel spreadsheet. Analysis was done using SPSS version 15 (SPSS Inc. Chicago, IL, USA) Windows software program. The variables were assessed for normality using the Kolmogorov-Smirnov test. Descriptive statistics were calculated.

RESULTS

Out of the total of 115 patients studied, 70 were males while 45 were females (Table 1). The majority of the patients were in the second decade followed by 3rd decade and fourth decade respectively with mean age being 29.15 years. The most common presenting complaints were abdominal pain (n=115), Nausea (n=55), vomiting (n=77) and diarrhoea (n=14).

At surgery,.68.6% of appendices were apparently inflamed. 1.7% were perforated and 5.2% had appendicular abscess whereas in 24.3% cases faecolith with inflammation was present (Table 2). In this study open appendicectomy was performed in 63% of the patients and laparoscopic appendicectomy in 37% of the patients. Around sixty nine percent of the patients presented within 24 hours of the onset of symptoms whereas 27% presented 24-48 hours after the onset of symptoms. Four percent of the patients presented with symptoms more than 48 hours. Sixty percent of the patients were discharged on the 4th day, 5.2% were discharged on 5th day, 4.3% on 6th day, 25.2% on 7th day and 3.4% on 8th day and 1.7% had a hospital stay of 10 or more days (Table 3).

Table 1: Gender wise distribution of study participants.

Gender	Number	Percentage (%)
Male	70	60.8
Female	45	39.1
Total	115	

Table 2: Pathological diagnosis of study participants.

Pathological diagnosis	Number	Percentage (%)
Appendicular abscess	6	5.2
Appendicular perforation	2	1.7
Faecolith with inflamed appendix	28	24.3
Inflamed appendix	79	68.6
Total		

Table 3: Duration of hospital stay among study participants.

Number of days	Number	Percentage (%)
4th day	69	60
5th day	6	5.2
6th day	5	4.3
7th day	29	25.2
8th day	4	3.4
10 more days	2	1.7

DISCUSSION

AA is the most common surgical emergency of the abdominal cavity. Diagnosis of AA is especially intriguing in elderly, children and pregnant patients as it can progress to a more complicated state and even sepsis.[6] Appendicitis is the most commonly performed emergency abdominal surgery and can also be the site of a variety of neoplasms and unusual inflammatory conditions.[7] Present study was done to evaluate the epidemiology, clinical presentation, diagnosis, operative findings and histopathological findings in tertiary care hospital of Bhuj. In present study higher male ratio was observed, which is similar to many of the studies in the West Africa with male predominance.[2,9] Another study from New Delhi also shows also male predominance.[10] In the present study majority of the patients were in the 2nd decade. Marudanayagam et al in their study of 2660 appendicectomy also found similar result of 2nd decade

predominance with 35.09%.[7] Unlike uncomplicated AA, the perforated form is associated with a higher chance of postoperative complications such as intra-abdominal abscesses. In these cases, drains are widely used by surgeons to avoid the formation of intraabdominal abscesses. One study evaluated 199 patients with complicated AA, of whom 79 used drains and 120 did not: 15% of patients without peritoneal drainage developed intra-abdominal abscess after appendectomy 27. The perforation rate on histology was 2.1% which is slightly lower than the 5–26% reported in the literature. Colson et al proposed that a delay in presentation of more than 12 hours after onset of symptoms increased the perforation rate and an in-hospital delay did not affect the perforation rate.[11] The most common appendectomy postoperative complications are related to the degree of appendiceal inflammation. It is important to take into account the time elapsed from the onset of symptoms and the time of operation.

The hospitalization time also increases with the severity of appendicitis 30, which we also observed in our study. 69% 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 2.1% had perforated appendix. These findings were comparable to those reported by Deyet al.[12]

CONCLUSION

Present study shows that acute appendicitis in India is a disease of young males. Hospitalization time was directly associated with the evolutionary phase and increased with the severity of appendicitis. 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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