ORIGINAL ARTICLE

Frequency of Complications of Acute Appendicitis

ABDUL HAFEEZ ARAIN[1], SHAHNAWAZ KHATTI[2], RIAZ AHMED MEMON[3], ABDUL SALAM MEMON[4], SHAHEEN GUL[5], SHAHIDA KHATOON[6]
[1]*Medical officer, BHU, Bhiria Raod, Naushro* Feroze
[2]*Senior registrar, General surgery department, LUMHS, Jamshoro*
[3,4]*Assistant Professor, General surgery department, LUMHS, Jamshoro*
[5]*Consultant surgeon, General surgery department, LUMHS, Jamshoro*
[6]*Professor, General surgery department, LUMHS, Jamshoro*
Correspondence to: Dr. Shahnawaz Khatti, Email: drkhatti786@gmail.com, Ph.#.0333-8866722

ABSTRACT

Objective: To evaluate the most common complication of acute apeendicits anomg patients presented with complicated acute appendicitis at tertiary care Hospital.

Subjects and Methods: This case series study was conducted at surgical unit II of Liaquat University Hospital Jamshoro, from 10th October 2010-9th October 2012. Total 100 patients of complicated appendicitis, age >12 years and either of gender were included. All patients were subjected to ultrasound examination to exclude any other associated pathology of acute appendicitis. Most complications were diagnosed pre operatively while some are diagnosed per operatively. A self-made proforma was used to collect the data. The data was analyzed via SPSS version 20.

Results: Total one hundred patients of appendicular complications were evaluated, their mean age was 27.28+9.70 years amd males were in majority as 65%. Pain was the commonest symptom including anorexia, nausea and vomiting. Fever was found in almost all of the patients, followed by 25% tenderness and rebound tenderness during palpation, 10% muscular guarding, 35% abdominal Bloating and 30% mass formation. Most common complication of acute appendicitis was the perforation in 35% patients, 30% appendicular mass, appendicular abscess 25%, gangrenous appendix 07% and intestinal obstruction 3%. As per intraoperative findings, 33% cases had localized peritonitis and perforated appendix, 25% had intra-abdominal peritonitis + inflamed appendix, 30% had RIF mass + inflamed appendix, 03% had adhesions + inflamed appendix and 7% had inflamed + gangrenous appendix.

Conclusion: Perfortion of appendix, appendicular mass and appendicular abcess were found to be the commones pre-operative complications, while localized peritonitis with perforated appendix and inflamed appendix were the commonest peroerative findings.

Keywords: Appendicitis, complications, perforation

INTRODUCTION

Acute appendicitis (AA) is a major factor of lower quadrant abdominal pain within the emergency unit and the most prevalent diagnosis among hospitalized acute abdomen patients of young age. [1] About 6.5% of visits to the emergency unit are because of abdominal pain, and AA is the commonest condition requiring surgery.[2,3] Appendectomy is traditionally the preferred procedure for the cases of acute appendicitis.[4] The exact etiology of acute appendicitis remains unknown; although luminal blockage, dietary and family factors have been indicated, however multifactorial causes may be involved in some cases. [5] The cornerstone for lowering the rates of negative appendectomy and the likelihood of misdiagnosis is to improve diagnostic pathway. The diagnosis of AA mostly relied on signs, symptoms and laboratory evidence until the extensive application of CT imaging.[4] A mass or lump formation is prevalent as a result of delayed presentation following appendicitis; and gangrene, perforation, abscess, or pus formation frequently complicate this condition.[6] However, in comparison to non-perforating AA, perforation is correlated with greater mortality and morbidity, and the projected percentage of perforation ranges between 16% and 40%, with a greater rate occurring among younger age individuals (40% to 57%) and among patients aged above 50 years (55% to 70%).[7,8] Delay in surgery is expected to worsen morbidity or lead to more serious appendicitis, like periappendiceal abscess or perforated appendicitis. [9] However , it is stated that making a precise diagnosis before surgery early enough to minimize needless appendectomies and minimize the likelihood of perforation yet remains challenging.[10] Howevev, this study has been condcuted to assess the the frequency of complications of acute appendicitis at tertiary care Hospital.

MATERIALAND METHODS

This case series study was conducted at surgical unit II of Liaquat University Hospital Jamshoro, from 10th October 2010-9th October 2012. Total 100 patients of complicated appendicitis, age >12 years and either of gender were included. All the pregnant females, previous history of abdominal surgery, unfit for surgery and those not willing to participate in the study were excluded. A thorough medical history was obtained and each patient underwent a thorough abdominal examination that included local temperature, rebound tenderness, rigidity/guarding area of peak tenderness, mass formation or swelling, Poas sign, Rovsing's sign, Baldwin's sign, Obturator sign, and a rectal investigation to look for mass formation or pelvic tenderness. All patients underwent an ultrasound screening by a skilled radiologist to rule out some other pathology as well as to establish the diagnosis when it was unclear. In patients aged over 40 years, who were going to have surgery, an electrocardiogram was recommended to check their heart state and anesthetic fitness. Following

anaesthetic fitness, every patient was thoroughly briefed on the benefits, drawbacks, and complications of the surgical process and also anesthesia. The patients were also completely explained regarding the partaking in the study and then a written informed consent was recieved. The majority of complications were diagnosed prior to surgery, but others were discovered thereafter. A self-made proforma was used to collect the data. The data analysis was peformed using SPSS version 20.

RESULTS

Overall one hundred individuals with appendicular disorders were assessed during the course of the one-year. These patients were 27.28+9.70 years old on average. Males comprised 65% of the study subjects, while females comprised 35%. Male-female ratio was 1.6:1. Abdominal pain was the most frequent symptom in 63 (63%) of study subjects lasting for 7-10 days, 20 (20%) of study subjects were found to have pain along with anorexia, pain along with vomiting and nausea was seen among 17(17%) of the study subjects. All of the study subjects (100%) were found to have Fever as a commonest sign, tenderness and rebound tenderness on palpation was seen in 25 (25%) of study subjects, muscular guarding was seen in 10(10%) of the study subjects, Abdominal Bloating signs were present in 35(35%) of cases, and 30(30%) of the study subjecs were found to have RIF mass. Table.1

Table 1: Demographic finding of the study participants=100

Variables		Statistics
Age	Mean+SD	27.28+9.70 years
Gender	Male	65(65%)
	Female	35(35%)
Presenting symptoms	Only pain	63(63%)
	Pain with anorexia	20(20%)
	Pain with nausea and vomiting	17(17%)
Signs	Pyrexia	100(100%)
	Tenderness and rebound tenderness	25(25%)
	Muscular guarding	10(10%)
	Abdominal bloating	35(35%)
	Mass formations	30(30%)

Table. 2. Pre-operative diagnosed complications of acute appendicitis n=100

Complication	No. of patients (%)
Perforated appendix	35%
Appendicular mass	30%
Appendicular abscess	25%
Gangrene of appendix	07%
Intestinal obstruction	3%

Table.3. Intra operative findings of acute appendicitis n=100

Intra operative findings	Frequency (%)
perforated appendix + Localized peritonitis	33%
perforated appendix + Generalized peritonitis	02%
inflamed appendix + Intra-abdominal peritonitis	25%
RIF mass + inflamed appendix	30%
Adhesions + inflamed appendix	03%
Inflamed + gangrenous appendix	07%

In this study, most frequent complication of AA was perforation of appendix, which was seen in 35% of cases, 30% patients were diagnosed with Appendicular mass, 25% cases withappendicular abscess, 07% patients with gangrenous appendix and 3% cases had intestinal obstruction. Table.2

As per intraoperative findings out of all 33% cases had localized peritonitis and perforated appendix, 02% generalized peritonitis and perforated appendix, 25% had intra-abdominal peritonitis + inflamed appendix, 30% had RIF mass + inflamed appendix, 03% had adhesions + inflamed appendix and 7% had inflamed + gangrenous appendix. Table. 3

DISCUSSION

In this study mean age of study subjects was 27.28+9.70 years. In the study of Khan M et al[11] reportd that the mean age of complicated patints was 34.6±14 years, while Bhuiyan MN et al[12] reported 24 years of mean age. The difference in theage average may because of envirmental changes, age range and sample size of the studies. In this study males were in majority 65% and females were 35%. Similarly Bhuiyan MN et al[12] reported that theout of all study partecepants males were in majority. On other hand Naqvi SR et al[13] reported that the males were in majority 56.2%.

In this study, abdominal pain was the most frequent symptom in 63 (63%) of study subjects lasting for 7-10 days, 20 (20%) of study subjects were found to have pain along with anorexia, pain along with vomiting and nausea was seen among 17(17%) of the study subjects. All of the study subjects (100%) were found to have Fever as a commonest sign, tenderness and rebound tenderness on palpation was seen in 25 (25%) of study subjects, muscular guarding was seen in 10(10%) of the study subjects, Abdominal Bloating signs were present in 35(35%) of cases, and 30(30%) of the study subjecs were found to have RIF mass. On the other hand, Wang N et al[14] also found comparables findings regarding clinical features. AL-MASHHADANY OI et al[15] also found similar finidmgs regarding sign and symptoms.

In this study the most frequent complication of AA was perforation of appendix seen in 35% patients, 30% patients were diagnosed with Appendicular mass, appendicular abscess was in 25% of the patients, 07% of cases were ssen with gangrenous appendix and 3% cases had intestinal obstruction. Similalry Bhuiyan MN et al[12] reported that laparoscopic appendectomy was performed in 60 patients who had complicated appendicitis. They found perforated appendicitis in 35 patients, gangrenous appendicitis in 12 patients, and early appendicular abscess or lump in 13 patients. In another study of Kang CB et al[16] it was reported that 7.6% of patients had acute simple appendicitis, 72.0% caese had acute purulent appendicitis, and 20.3% cases had acute gangrene and perforation. On other hand Rawolle T et al[17] reported that the 26.9% out of 119 study subjects were found to have complicated appendicitis, 11 study subjects had non-perforating gangrenous appendicitis and 21 study subjects had perforation and gangrenous appendicitis. However perforated appendicitis has been found to be linked with raised postoperative morbidity and mortality

CONCLUSION

Perfortion of appendix, appendicular mass and appendicular abcess were found to be the commones pre-operative complications, while localized peritonitis with perforated appendix and inflamed appendix were the commonest peroerative findings. Early diagnosis amd management can be derease the morbidity and mortality.

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