

ORIGINAL RESEARCH**Management of complicated appendicitis****¹Dr. Sanjeev Singh, ²Dr. Mahima Vaid, ³Dr. Taruna Saroch, ⁴Dr. Sushant Trakroo**^{1,3,4}Senior Resident, ²Junior Resident, Department of Surgery, GMC, Jammu, Jammu and Kashmir, India**Corresponding author**

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Received: 14 October, 2022

Accepted: 19 November, 2022

ABSTRACT

Introduction- Complicated appendicitis is defined as perforated appendicitis, peritonitis, peri-appendicular abscess, or appendicular mass. Management of complicated appendicitis include treatments such as percutaneous drainage & antibiotics and afterward delayed appendectomy are needed. The current study is done to evaluate the management about complicated appendicitis.

Material and methods- It is a retrospective study conducted at government medical college , Jammu for a period of 1.5 year. Of the 946 patients, 531 were further diagnosed with complicated appendicitis. The data consisting of sociodemographic variables, clinical features and type of surgery performed was collected under regular supervision and analyzed using the SPSS version 25 statistical package.

Results – Most of the patients, 341 (64.2%), were in the age group of 15–25 years. Males accounted for 350 (65.9%) of the study participants. Most common clinical feature was abdominal pain present in 83.4%, followed by nausea (79%) and vomiting (78.3%). 511 had appendectomy performed except where there was suspected rupture when a mid-line abdominal incision was used.

Conclusion- Participants in the research who had complicated appendicitis made up about more than fifty percent. Management of appendicitis include Appendectomy and removal of appendix.

Keywords- appendectomy, complicated appendicitis, management, adults

INTRODUCTION

An immune organ, the appendix takes role in the secretion of immunoglobulins such as immunoglobulin A. [1] Vermiform appendix inflammation is referred to as acute appendicitis. With a lifetime risk of 7-8% globally, it is a prevalent cause of acute abdomen. It is often identified by a consistent combination of symptoms and signs, and it can be adequately treated surgically with low rates of morbidity and mortality. [2] Uncomplicated and complicated acute appendicitis fall into two primary groups. [3]

The symptoms of acute appendicitis are frequently ignored, and many patients experience complications. Every year, 300,000 appendectomies are performed, and 25% of those are done because of severe appendicitis (CA). The percentage of CA varies and in some studies can exceed 50%. [4,5]

Complicated appendicitis is defined as perforated appendicitis, peritonitis, peri-appendicular abscess, or appendicular mass. If acute appendicitis is left untreated, necrosis, gangrene, and perforation occur.[6,7]

Management of complicated appendicitis include treatments such as percutaneous drainage & antibiotics and afterward delayed appendectomy are needed. [8] The prognosis worsens significantly in CA, predisposing the patient to a prolonged hospital stay, broad-spectrum antibiotics use and increased morbidity.[9,10]

Several studies have tried to evaluate about complicated appendicitis and its management but a very scarce literature is present on this topic. Hence the current study is done to evaluate the management about complicated appendicitis.

MATERIAL & METHODS

It is a retrospective study conducted at government medical college , Jammu for a period of 1.5 year. The study population consist of all patients admitted with the diagnosis of appendicitis to the GMC, Jammu , general surgery department during the study period. All the desired information was gathered from the patient records. Inclusion criteria consist of patients admitted to surgery department with diagnosis of complicated appendicitis.

The total number of patients admitted with a diagnosis of appendicitis in the Department of Surgery was 946. Of the 946 patients, 531 were further diagnosed with complicated appendicitis. The data consisting of sociodemographic variables, clinical features and type of surgery performed was collected and analyzed using the SPSS version 25 statistical package. The descriptive analyses were presented by frequency tables and percentages. Statistical significance was declared when the p-value was less than 0.05 .

RESULTS

Total number of patients were 531 and the mean age of respondents was 29.28 years, with a standard deviation of 12.79. Most of the patients, 341 (64.2%), were in the age group of 15–25 years. Males accounted for 350 (65.9%) of the study participants.(Table 1)

Table 1: Socio-Demographic Characteristics of Patients Diagnosed with Complicated Appendicitis

Variable		Frequency	Percentage
Age	15-25	341	64.2
	25-45	103	19.3
	>45	87	16.3
Gender	Male	350	65.9
	Female	181	34.8

Most common clinical feature was abdominal pain present in 83.4% , followed by nausea (79%) and vomiting (78.3%). The other features are anorexia, fever, comorbidities and abdominal tenderness.(Table 2)

Table 2: Clinical features of patients with complicated appendicitis

Clinical features	Frequency	Percentage
Abdominal pain	443	83.4
Nausea	420	79.0
Vomiting	416	78.3
Anorexia	215	40.4
Fever	178	33.5
Co morbidities	166	31.2
Abdominal tenderness	154	29.0

Out of 531 patients 478 had appendicectomy performed mainly via the Grid Iron (456, 85.8%) and Lenz (22, 4.14 %) incisions, except where there was suspected rupture when a mid-line abdominal incision was used. (Table 3).

Table 3: Type of surgery

Type of surgery	Frequency	Percentage	
Appendicectomy	Lanz	22	4.14
	Grid	456	85.8
	Midline laparotomy	53	9.98

DISCUSSION

Appendectomy was the 11th most common US operating room surgery in 2012, with 293,000 procedures, or 93.3 per 100,000 population, according to the Agency for Healthcare Research and Quality. [11] Even with simple early appendicitis, many now recommend antibiotic therapy.[12] Surgeons worry about complex appendicitis with an inflammatory mass, abscess, or delayed presentation. The management of patients who appear with appendicitis complicated by a local or contained perforation, as well as with an appendiceal abscess or mass formation, is not standardised. According to the medical theory that the offending organ should be removed in order to treat infection, an appendectomy was historically thought to be the best course of action for complicated appendicitis.

In 1886, Reginald H. Fitzpatrick published the first description of the natural history and development of acute appendicitis.[13]. Since then, it has gained widespread acceptance that untreated appendicitis can develop into perforation, which is linked to noticeably higher rates of morbidity, mortality, hospital stay, and resource utilisation [14]. The risk of postoperative problems is typically increased by complicated appendicitis [15]. New approaches are therefore explored, including nonsurgical treatment and interval appendectomy following initial antibiotic therapy. Recent research on paediatric patients indicates that hydration and antibiotic administration may enable doctors to postpone operation without negatively affecting patient outcomes [16,17].

A safe alternative to surgery for acute appendicitis treatment, according to randomised controlled studies, is antibiotic therapy [18,19]. Recent research suggests that nonoperative management without interval appendectomy following antibiotic therapy may be an alternative option for complicated appendicitis. This is supported by evidence of relatively low rates (10%) of appendicitis or abscess recurrence after conservative management as well as reportedly high complication rates (as high as 12%–23%) in patients undergoing interval appendectomy [20–22]. A different research, however, came to the opposite conclusion and recommended interval appendectomy for people over 40 because their neoplasm rate was 10 of 62 (16%) as opposed to 1 of 27 (4%) in patients under 40 [23].

Out of the total patients, 56.13% were reported to have CA. The prevalence of CA in this research was found to be greater when compared to other studies conducted in Pakistan, Japan, and India, which reported the prevalence as 20%, 16.1%, and 31.8%, respectively.[24-26] Another multicenter observational research performed in 18 surgical centers also stated the prevalence of CA was 27.48%.[27] A delay in presentation or referral from primary health care facilities is expected to be high can be a cause to higher prevalence in our study.

Complicated appendicitis is typically diagnosed clinically. The patient typically presents with pain that later shifts to the right iliac fossa and is most painful at the McBurney's point. Clinical characteristics in our patients were comparable to those in prior research. All patients had pain. Anorexia, fever, vomiting, nausea, and constipation were other significant complaints similar to research done by Colson M et al.[28]

To avoid perforation and ensuing peritonitis, the majority of surgeons advise appendicectomy as soon as complicated appendicitis is diagnosed, in our study it was found to be 39.3 % percent. This has allowed many care centres to justify appendectomy rate of between 15 and 25 percent. [29,30] Similar to what Osime et al [31] stated, this series' appendectomy rate was 24.1%.

Since the research was retrospective, it was not possible to collect all the previous data of patients from reports.

CONCLUSION

Participants in the research who had complicated appendicitis made up about more than fifty percent. Patients with nonspecific abdominal discomfort, pain, fever, nausea, vomiting & shock gap were more likely to develop CA. Management of appendicitis include Appendectomy and removal of appendix.

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