

Incidence of Complications in Patients Diagnosed with Acute Appendicitis**Pradip Nautamlal Malaviya¹, Vijay Vasantlal Paria²**¹Assistant Professor, Department of General Surgery, GMERS Medical College, Junagadh Gujarat, India²Assistant Professor, Department of General Surgery, Shantabaa Medical College and General Hospital, Amreli, Gujarat, India

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Conflict of interest: Nil

Abstract:**Background and Aim:** Acute appendicitis is still the most common general surgical emergency seen in most hospitals, as well as the leading cause of acute abdomen requiring surgical intervention. The purpose of this study was to find out how common complications were in patients with acute appendicitis.**Material and Methods:** The study included all patients with acute appendicitis who presented to Tertiary Care Teaching Institute of India throughout a one-year period. The current study included a sample size of 100 people. The sampling technique employed was a practical sampling technique. Clinical evaluation, tests such as WBC counts, X-ray erect abdomen, USG abdomen and pelvis, and management were all documented. The occurrences of complications were investigated. Except for those who did not react to antibiotics, appendicular mass patients were handled conservatively.**Results:** Overall complications were reported in 80 participants in our research of 100 patients with appendicitis. In this study, the most prevalent complication found in the paediatric age group was appendicular perforation, followed by peritonitis and small bowel blockage. In patients above the age of 18, the most prevalent consequence was surgical site infection (21%), followed by perforation (16%).**Conclusion:** In the current investigation, the most prevalent complication found in appendicular perforation patients was postoperative wound infection. Perioperative antibiotics have been demonstrated to reduce the incidence of postoperative wound infections and abscess formation.**Keywords:** Acute appendicitis, antibiotics, appendicular perforation, wound infection are key terms.

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Introduction

The inflammation of the vermiform appendix is known as appendicitis. It usually manifests within 24 hours of start, however it can also manifest as a chronic illness. [1] The annual crude incidence of acute appendicitis was 86 per 100,000.2 Delays in diagnosis increase the chance of surgery, as well as morbidity, mortality, and management costs. Despite its prevalence, it is difficult to diagnose. [3] For patient treatment, early intervention is required. [4]

Patients most usually appear with complaints such as fever, abdominal pain, and vomiting. Delays in diagnosis result in consequences such as abscess formation, gangrene, perforation, and peritonitis. The proportion of perforations increases as the duration of symptoms increases. [5] Although the mortality rate linked with appendicular rupture has decreased considerably in recent years, the morbidity rate remains high. [6] The surgical principle of "when in doubt, take it out" for acute appendicitis is incorrect in light of the number of major and mild complications following

appendectomy. Fitz was the first to describe the classic signs and symptoms of acute appendicitis. The Alvarado score was first proposed in 1986 and has now been verified in adult surgical practice. The implementation of an objective grading system, such as the Alvarado system, can minimize the occurrence of negative appendectomy to 0-5%.

Material and Methods

The study included all patients with acute appendicitis who presented to Tertiary Care Teaching Institute of India throughout a one-year period. This study only covered participants between the ages of 5 and 45. The current study included a sample size of 100 people. The sampling technique employed was a practical sampling technique.

Criteria for inclusion The study comprised patients aged 5-45 years, those who consented to participate, those who presented with non-traumatic

acute abdominal discomfort, and those who required surgical intervention within 24-48 hours.

Criteria for exclusion Patients with traumatic acute abdomen, acute abdomen related to urological or gynecological problems, or children under the age of five were excluded from the study.

Following an explanation of the study and the patient's informed consent, a thorough history of the presenting ailment was obtained from the patient or their attenders. Clinical results were recorded using a pre-defined form. All of the patients were thereafter subjected to blood tests and ultrasound examinations, and the results were recorded. Finally, for each patient, intraoperative findings and postoperative follow-up information were gathered and recorded.

A thorough history was obtained from the patient or the patient's attendance. A thorough general and systemic examination was performed, and clinical findings were recorded. The clinical features of the Alvarado score were utilized to diagnose acute appendicitis. Blood tests and urinary analysis were performed on all patients, as well as an upright X-ray abdomen, USG abdomen, and pelvis for the disease being investigated. Blood tests (WBC counts) and urine analysis aided in the diagnosis of patients with acute appendicitis. Appendicular perforation was assessed using a USG and an upright X-ray abdomen.

Patients undergoing emergency surgery were properly prepared. Ryle's tube aspiration was performed whenever vomiting continued. Parenteral fluids, electrolyte replacement, and broad-spectrum antibiotics were given. The temperature, pulse, and respiratory chart were taken every hour. The surgery was performed under general or spinal anaesthesia. Grid-iron incision was done when the diagnosis of acute appendicitis

was certain. When the diagnosis was equivocal or frank peritonitis was suspected, a right paramedian incision was utilised. The appendix was evaluated prior to excision. The specimen was sent for histological analysis, and the reports were analysed. The complications in each case were then studied.

Statistical Analysis

The collected data was assembled and input into a spread sheet programme (Microsoft Excel 2007) before being exported to the data editor page of SPSS version 15 (SPSS Inc., Chicago, Illinois, USA). Based on their distribution, quantitative variables were described as means and standard deviations or median and interquartile range. The qualitative factors were shown as counts and percentages. The confidence level and level of significance for all tests were set at 95% and 5%, respectively.

Results

Overall complications were seen in 80 of the 100 individuals in our investigation of appendicitis. Postoperative surgical site infections were the most prevalent complication reported in 21 appendicular perforation patients.

Patients in our study ranged in age from 5 to 45 years (Table 1). The total number of patients was N=85, indicating that 85% were over the age of 18. Postoperative surgical site infection (20%) was observed in perforated appendix patients in our research of 100 individuals with acute appendicitis.

In this study, the most prevalent complication found in the paediatric age group was appendicular perforation, followed by peritonitis and small bowel blockage. In patients above the age of 18, the most prevalent consequence was surgical site infection (21%), followed by perforation (16%).

Table 1: Age wise ratio of the patients included in the study

Age (in years)	No. of patients	Percentage %
<18	15	15
>18	85	85
Total	100	100

Table 2: Age wise distribution of complications

Complications	No. of patients (<18 years)	No. of patients (>18 years)
Nil complication	8	20
Appendicular mass	2	8
Appendicular abscess	2	15
Appendicular perforation	4	9
Peritonitis	3	8
Small bowel obstruction	3	3
Gangrenous appendix	Nil	3
Postoperative wound infection	Nil	21
Intraabdominal abscess	Nil	4

Discussion

The most common surgical emergency is acute appendicitis. When acute appendicitis advances to perforation, the implications are generally delayed and severe recovery, if not death. The delayed presentation with concomitant underlying comorbidities is a primary cause of increased morbidity in perforated appendicitis. [7]

In an Omari et al research, 44 (21%) individuals experienced surgical problems. Complications were three times more common in the perforated group of patients than in the non-perforated group. Two patients in the perforated group developed numerous intraabdominal abscess collections. [8] According to their findings, the perforation rate linked well with delayed presentation but not with in-hospital delay. The incidence of appendiceal perforation in acute appendicitis was estimated to be 20-30%, increasing to 32-72% in individuals over the age of 60. According to their findings, fever (>38°C) was present in 41% of all patients and was significantly greater in the perforated group. WBC levels were found to be increased in 63% of all patients, with 74% shifting to the left. As expected, values were greater in the perforated group, with 71% having high WBC and 94% shifting to the left. [9] These ideas have recently shifted. Appendicitis was frequently diagnosed using the Alvarado score and an ultrasound examination that was operator dependent. [9] In dubious situations, a CT scan abdomen and laparoscopy can help to limit the morbidity associated with this disease. An increase in total leucocyte count as well as the length of the presentation can be used to identify complex appendicitis. [10] To lessen the likelihood of negative laparotomies, a CT scan of the abdomen might be performed. [11]

The most prevalent cause of stomach pain is appendicitis. Pain was the most common symptom of appendicitis, followed by fever and vomiting. The first symptom is periumbilical colicky pain around the midgut. Irritation of the parietal peritoneum causes localised pain. Over the course of 24 hours, the discomfort worsens, accompanied by nausea, vomiting, and lack of appetite. [12] Other signs of acute appendicitis include right lower quadrant pain, rigidity, migration/periumbilical pain, pain before vomiting, Psoas sign, fever, guarding, no similar previous pain, rebound tenderness, anorexia, vomiting, rectal tenderness, nausea, Obturator sign, Rovsing sign, absent/decreased bowel sounds, and pain with hopping/coughing/percussion. [5] For the examination of patients with suspected acute appendicitis, ultrasonography, computed tomography (CT), and magnetic resonance imaging are preferable modalities. [4] the most serious complication of acute appendicitis is perforation,

which can result in abscesses, peritonitis, intestinal blockage, reproductive problems, and sepsis. [13]

In our study, 1.30% of patients had a perforated appendix. Because acute appendicitis is a common emergency issue, prompt diagnosis is the most difficult phase for the practitioner to avoid complications. However, the existing facts on etiology and treatments are still unclear. Abdominal CT was a well-established technology in the investigation of acute abdominal pain and has shown good sensitivity and specificity for identifying and distinguishing appendicitis, offering an accurate diagnosis in the early stages of disease, according to a study done by Leite et al. [14] Amitkumar et al conducted a study in which 40 patients (86.96%) required operational surgical surgery, while 6 patients (13.04%) with appendicular mass were handled conservatively. [15] 35 patients (85.37%) had emergency surgeries, while 5 patients got elective procedures. The most common surgery was open appendicectomy (34.78%), followed by laparoscopic appendicectomy (28.26%). [15]

Because the study was conducted at a single institution, the findings may not be totally generalizable to other situations. As a result, for future studies, a study design with a higher level of evidence is proposed. There may also be responder bias and information bias.

Conclusion

The most prevalent cause of an acute abdomen is acute appendicitis. In the current study, open appendicectomy is the most usually performed procedure. Appendicitis complications include perforation, gangrene, and appendicular tumour. In the current investigation, the most prevalent complication found in appendicular perforation patients was postoperative wound infection. Perioperative antibiotics have been demonstrated to reduce the incidence of postoperative wound infections and abscess formation.

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