ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Clinical Presentation And Management Of Acute Appendicitis Cases At Tertiary Care Hospital: Observational Study.

Sachin Bagadiya[1]*, Ashish Zadpe[2], and Mangesh Munde[3].

[1]Department of Surgery, Madhav Multispecialty Hospital, Hingoli, Maharashtra, India.
[2]Asst Professor, Department of Surgery, Govt Medical College, Hingoli, Maharashtra, India.
[3]Seniour Resident, Department of Surgery, Governing Medical College, Hingoli, Maharashtra, India.

ABSTRACT

Acute appendicitis is one of the most common surgical emergencies, presenting with variable clinical manifestations and requiring timely diagnosis and management to avoid complications. This study aimed to analyze the clinical presentation, diagnostic methods, management strategies, and outcomes of acute appendicitis cases. A prospective observational study was conducted at a tertiary care hospital over 12 months, involving 60 patients aged 10–70 years. Detailed demographic data, clinical history, physical examination findings, and diagnostic tests, including laboratory investigations and imaging, were collected. Patients were managed with laparoscopic or open appendectomy or conservative treatment based on the severity of the condition. Postoperative outcomes and complications were analyzed using statistical tools. The majority of patients (33.3%) were aged 21–30 years, with a male-to-female ratio of 1.4:1. Right lower quadrant pain (90%), guarding (80%), and elevated WBC counts (75%) were predominant findings. Laparoscopic appendectomy was performed in 66.7% of cases, with a low complication rate (8.3% surgical site infections). The mean hospital stay was 4.5 ± 1.2 days, with 95% achieving complete recovery. Laparoscopic appendectomy remains the preferred treatment for acute appendicitis due to its safety and favorable outcomes. Conservative management may be considered for selected cases.

Keywords: Acute appendicitis, laparoscopic appendectomy, surgical outcomes.

https://doi.org/10.33887/rjpbcs/2024.15.6.39

Corresponding author

ISSN: 0975-8585

INTRODUCTION

Acute appendicitis is one of the most common surgical emergencies worldwide, accounting for a significant proportion of cases presenting with acute abdominal pain. It is characterized by inflammation of the vermiform appendix and typically affects individuals in the second and third decades of life, though it can occur across all age groups. The condition presents a diagnostic challenge due to its variable clinical manifestations, which can range from classic symptoms such as right lower quadrant abdominal pain, nausea, and fever to atypical presentations, particularly in pediatric, geriatric, and pregnant populations [1].

Despite advancements in diagnostic tools, including ultrasonography, computed tomography (CT), and scoring systems such as the Alvarado Score, the diagnosis of acute appendicitis remains predominantly clinical. Early and accurate diagnosis is critical to prevent complications such as perforation, abscess formation, or generalized peritonitis, which significantly increase morbidity and mortality [2, 3].

The management of acute appendicitis has traditionally been surgical, with appendectomy being the definitive treatment. However, there is growing interest in non-surgical management strategies, including antibiotics, particularly in cases of uncomplicated appendicitis. This study aims to evaluate the clinical presentation, diagnostic approaches, and management outcomes of acute appendicitis, providing insights to enhance patient care and optimize treatment protocols [4].

METHODOLOGY

This study was conducted as a prospective observational study to evaluate the clinical presentation and management outcomes of acute appendicitis. The study was carried out in the Department of General Surgery at a tertiary care hospital over a period of 12 months, from January 2023 to December 2023. Ethical clearance was obtained from the institutional review board prior to the commencement of the study, and informed consent was secured from all participants. A total of 60 patients, aged between 10 and 70 years, who presented with symptoms suggestive of acute appendicitis and fulfilled the inclusion criteria, were enrolled in the study.

The inclusion criteria consisted of patients presenting with clinical features indicative of acute appendicitis, confirmed by imaging modalities such as ultrasonography or computed tomography. Patients with a prior history of appendectomy, generalized peritonitis, or other significant abdominal conditions were excluded from the study. Detailed demographic data, clinical history, and physical examination findings were recorded for all participants. Diagnostic tools used included laboratory investigations such as complete blood count and C-reactive protein levels, alongside imaging studies.

Management of the enrolled patients was categorized based on the severity of appendicitis. Uncomplicated cases underwent either laparoscopic or open appendectomy, as per the surgeon's preference and institutional protocol. Complicated cases, including those with perforation or abscess, were initially managed with intravenous antibiotics and supportive care, followed by interval appendectomy when deemed appropriate. Surgical findings, postoperative complications, and length of hospital stay were documented for each patient.

Data analysis was performed using statistical software, with results presented as frequencies, percentages, means, and standard deviations. Comparative analyses were conducted to assess the outcomes of different management strategies. The findings of this study provided insights into the effectiveness of clinical and surgical interventions in acute appendicitis, contributing to evidence-based improvements in patient care.

ISSN: 0975-8585

RESULTS

Table 1: Demographic Profile of Patients.

Characteristic	Number (n=60)	Percentage (%)
Age Group (Years)		
10-20	12	20%
21-30	20	33.3%
31-40	15	25%
41-50	8	13.3%
51-70	5	8.3%
Gender		
Male	35	58.3%
Female	25	41.7%

Table 2: Clinical Presentation of Acute Appendicitis.

Symptoms	Number (n=60)	Percentage (%)
Right lower quadrant pain	54	90%
Nausea and vomiting	40	66.7%
Fever	30	50%
Anorexia	35	58.3%
Atypical abdominal pain	15	25%
Guarding/Rebound tenderness	48	80%

Table 3: Diagnostic Findings.

Investigation	Positive Cases (n=60)	Percentage (%)
Raised WBC count (>11,000/mm^3)	45	75%
Elevated CRP levels	40	66.7%
Ultrasound-confirmed diagnosis	50	83.3%
CT-confirmed diagnosis	10	16.7%

Table 4: Management and Surgical Approach.

Management Strategy	Number (n=60)	Percentage (%)
Laparoscopic appendectomy	40	66.7%
Open appendectomy	15	25%
Non-surgical management (antibiotics)	5	8.3%
Complications (Post-surgery)		
Surgical site infection	5	8.3%
Peritonitis	2	3.3%

Table 5: Outcomes and Hospital Stay.

Outcome Parameter	Mean ± SD	Range
Length of hospital stay (days)	4.5 ± 1.2	3-8
Time to resume normal activity (days)	7.5 ± 2.1	5-12
Successful recovery	57 (95%)	
Mortality	0	

DISCUSSION

Acute appendicitis remains a common surgical emergency, presenting with diverse clinical manifestations and requiring timely diagnosis and management to avoid complications. This study, involving 60 patients, aimed to analyze the demographic profile, clinical presentation, diagnostic methods, management strategies, and outcomes of acute appendicitis cases at a tertiary care center. The

findings of this study provide valuable insights and align with existing literature while highlighting specific trends relevant to the study population.

The majority of the patients in this study belonged to the age group of 21–30 years (33.3%), followed by 31–40 years (25%). This is consistent with existing studies, which suggest that acute appendicitis predominantly affects young adults, likely due to increased lymphoid tissue hyperplasia during this age. The male-to-female ratio of 1.4:1 also aligns with previous reports, indicating a higher incidence in males, possibly due to differences in hormonal and anatomical factors. This demographic distribution underscores the need for heightened awareness of appendicitis symptoms in young adults and males, who are at higher risk of developing the condition [5].

The clinical presentation in this study was largely typical, with 90% of patients reporting right lower quadrant pain, 66.7% experiencing nausea and vomiting, and 58.3% reporting anorexia. Guarding and rebound tenderness were noted in 80% of cases, supporting their diagnostic value in acute appendicitis. Fever was reported in 50% of cases, which aligns with inflammation and infection associated with the condition. However, 25% of patients presented with atypical abdominal pain, emphasizing the need for clinical vigilance, especially in populations such as the elderly and pregnant women, where symptoms may not be classic.

The findings reinforce the value of a thorough clinical examination as the cornerstone for diagnosing acute appendicitis. The presence of key symptoms like localized pain, anorexia, and guarding should prompt further diagnostic evaluation to confirm the condition and guide management [6, 7].

Laboratory and imaging findings played a pivotal role in confirming the diagnosis of acute appendicitis in this study. Raised WBC counts were observed in 75% of cases, while elevated CRP levels were noted in 66.7% of patients. These inflammatory markers are consistent with acute inflammation and serve as adjuncts to clinical diagnosis. Ultrasound, used as the primary imaging modality, confirmed the diagnosis in 83.3% of cases, with CT used in 16.7% of cases where ultrasound results were inconclusive or in atypical presentations. These findings highlight the importance of imaging in improving diagnostic accuracy, especially in challenging or equivocal cases [8]. While CT provides superior diagnostic accuracy, its limited use in this study reflects institutional preferences and considerations such as cost, availability, and radiation exposure. The high diagnostic accuracy of ultrasound (83.3%) supports its continued use as the first-line imaging modality in resource-limited settings.

The majority of patients in this study underwent laparoscopic appendectomy (66.7%), followed by open appendectomy (25%). Laparoscopic appendectomy was favored due to its well-documented benefits, including reduced postoperative pain, shorter hospital stays, and faster recovery times. Open appendectomy was performed in cases where laparoscopic surgery was contraindicated or unavailable. A small subset of patients (8.3%) received non-surgical management with antibiotics, reflecting growing interest in conservative approaches for uncomplicated appendicitis [9].

Postoperative complications were minimal, with surgical site infections reported in 8.3% of cases and peritonitis in 3.3%. These rates are comparable to other studies and demonstrate the safety and efficacy of surgical management in experienced hands. The low complication rates also reflect adherence to proper surgical protocols and perioperative care practices.

The trend towards minimally invasive surgery in this study mirrors global preferences and emphasizes the importance of equipping surgeons with the necessary skills and resources for laparoscopic procedures. Non-surgical management, although limited to a small subset, suggests a potential role for antibiotics in selected cases, warranting further exploration in future studies.

The study demonstrated favorable outcomes, with 95% of patients achieving complete recovery. The mean hospital stay was 4.5 ± 1.2 days, with patients resuming normal activities within an average of 7.5 ± 2.1 days. These findings highlight the effectiveness of timely surgical intervention in ensuring swift recovery and minimal morbidity. No mortality was reported in this study, reflecting the safety of appendectomy and effective perioperative management. Short hospital stays and rapid recovery rates underscore the benefits of laparoscopic surgery, which is increasingly regarded as the standard of care for acute appendicitis. However, open surgery remains a reliable alternative in cases where laparoscopy is not feasible.

CONCLUSION

The findings of this study reinforce the importance of clinical evaluation supported by laboratory and imaging findings in diagnosing acute appendicitis. Laparoscopic appendectomy remains the gold standard for treatment, offering superior outcomes with minimal complications. Non-surgical management, though limited in this study, shows promise for selected cases. Continued advancements in diagnostic and surgical techniques will further enhance the management of this common yet challenging condition, ensuring better outcomes for patients.

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