MANAGEMENT OF ACUTE APPENDICITIS IN PEDIATRIC PATIENTS

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Abstract: Acute appendicitis is one of the most common causes of abdominal pain requiring surgical intervention in children. Its diagnosis remains challenging due to variable clinical presentations and the potential for rapid progression to complications. This study investigates the clinical features, diagnostic methods, and treatment outcomes of pediatric patients with acute appendicitis admitted to a tertiary hospital.

Keywords: Acute appendicitis, Pediatrics, Abdominal pain, Appendectomy, Diagnostic imaging

Introduction

Acute appendicitis (AA) is a surgical emergency that frequently occurs in the pediatric population, especially among children aged 6–15 years. Early diagnosis is critical to prevent complications such as perforation, peritonitis, and sepsis. However, appendicitis in children often presents atypically, making clinical diagnosis difficult. Imaging modalities such as ultrasound and computed tomography (CT) can assist in confirming the diagnosis. Despite advances in imaging and laboratory testing, appendicitis remains a diagnostic challenge, particularly in younger children. This study aims to evaluate the clinical manifestations, diagnostic tools, and treatment outcomes in pediatric appendicitis cases.

Materials and Methods

A retrospective review was conducted of pediatric patients (ages 3–17 years) diagnosed with acute appendicitis and treated at the Pediatric Surgery Department of City General Hospital from January 2022 to December 2023. A total of 185 cases were included.

Data collected included patient age, gender, presenting symptoms (e.g., abdominal pain, vomiting, fever), duration of symptoms, laboratory results (white blood cell count, C-reactive protein), imaging findings, type of surgical intervention (open vs. laparoscopic appendectomy), intraoperative findings, and post-operative complications.

Statistical analysis was performed using SPSS version 26. Chi-square and t-tests were used to compare categorical and continuous variables.

Results

Out of 185 patients, 118 (63.8%) were male and 67 (36.2%) female. The mean age was 10.4 ± 3.1 years.
Most common presenting symptoms included:

- Right lower quadrant abdominal pain (94.6%)
- Nausea/vomiting (82.2%)
- Fever (64.3%)

Elevated white blood cell count (>10,000/μL) was observed in 85.9% of cases, and elevated CRP (>10 mg/L) in 77.3%. Abdominal ultrasound confirmed appendicitis in 79.5% of patients, while CT scan was used in 21.6% of cases with inconclusive US results.

Perforated appendicitis was observed in 29 patients (15.7%), most commonly in children under 6 years of age.
Laparoscopic appendectomy was performed in 68.1% of cases and was associated with shorter hospital stays (3.2 vs. 5.1 days, $p < 0.01$) compared to open surgery. Postoperative wound infection occurred in 8.6% of cases, and intra-abdominal abscess in 2.7%.

Discussion

This study highlights the importance of recognizing variable presentations of acute appendicitis in children. Right lower quadrant pain and elevated inflammatory markers remain the most consistent clinical features. Imaging, especially ultrasonography, plays a key role in reducing negative appendectomy rates. The incidence of perforation is higher in younger children, likely due to delayed diagnosis or atypical symptoms.

Laparoscopic surgery demonstrated favorable outcomes compared to open surgery, including reduced postoperative pain, quicker recovery, and shorter hospitalization. However, the risk of complications remains significant in cases of delayed presentation, emphasizing the need for early recognition and timely surgical intervention.

Conclusion

Acute appendicitis in children presents a diagnostic challenge due to its variable symptoms, particularly in younger age groups. Prompt diagnosis, aided by imaging and laboratory tests, is essential to avoid complications. Laparoscopic appendectomy offers better outcomes and should be preferred when feasible. Early surgical consultation is critical in any child with suspected appendicitis to minimize morbidity.

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