

Role of Home Remedies and Self-Medication in Late Presentation of Acute Appendicitis and Its Possible Consequences

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Abstract

Acute appendicitis is a common surgical emergency with significant morbidity and mortality if not promptly diagnosed and treated. Delayed presentation is often attributed to factors like home remedies, self-medication, and misdiagnosis by non-medical professionals. This study aimed to identify the reasons for delayed presentation of acute appendicitis in patients presenting to Northwest General Hospital, Peshawar. This retrospective study was conducted from January 2021 to October 2022, including 120 patients with acute appendicitis. Most patients (61%) were male, with an average age of 45 years. A significant number of patients (48%) presented from remote areas, and 31% delayed seeking medical attention for more than 2 weeks. Common reasons for delay included self-medication (38%), misdiagnosis by non-medical professionals (57%), and fear of surgery. Delayed presentation of acute appendicitis is a significant public health issue in the study area. Factors contributing to delay include limited access to healthcare, self-medication, and misdiagnosis. Early diagnosis and prompt surgical intervention are crucial to reduce complications and improve outcomes. Raising awareness among the public and healthcare providers about the importance of early presentation for acute appendicitis is essential.

Keywords: Acute Appendicitis, Delayed Presentation, Early Intervention, Misdiagnosis

Introduction

Across all age categories, acute appendicitis (AA) is the most frequent cause of acute abdomen among patients brought to the emergency room (Kotan et al., 2000; Yılmaz et al., 2017). The visceral peritoneum's heightened sensitivity is the first of the clinical indications of AA. Increased

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inflammation and parietal peritoneum sensitivity are now part of the clinical picture. While the exact location of the discomfort is not always known at first, it frequently advances to the right lower quadrant along with an increase in parietal peritoneal inflammation.

The patients' physical characteristics and symptoms serve as a diagnosis. The diagnosis of AA is supported by laboratory results such as leukocyte count, white blood cell count, C-reactive protein (CRP) level, and screening techniques such as magnetic resonance imaging, computed tomography (CT), and ultrasonography (USG). Furthermore, grading schemes like the Ohmann and Alvarado scores are beneficial for diagnosis. Finally, diagnostic surgeries should be carried out if the diagnosis remains unmade after these extra tests but AA is still suspected (Ahmed et al., 2020). Morbidity and death rates rise when AA patients are not diagnosed or treated promptly. There have been reports of up to 10% morbidity and 5% fatality rates for AA (Gomes et al., 2015). Early diagnosis and prompt initiation of the proper treatment are essential for lowering morbidity and death.

If acute appendicitis is not promptly detected or treated, it can lead to gangrene, perforation, appendicular mass, abscess, and localized or generalized peritonitis. The lifetime risk of acute appendicitis is 6.7% for women and 8.6% for men (Von et al., 1996; England & Crabbe, 2006). Acute appendicitis must be recognized and treated as soon as possible because a delayed presentation might lead to gangrene and perforation. The perforation happens in 8 to 24 hours in youngsters, but in 36 hours in teenagers and small toddlers (Trake & Flum, 2013). There are a number of reasons why acute appendicitis diagnosis and treatment are delayed, including waiting at home (home remedies), visiting nearby doctors, using homeopathic treatments, consulting quacks, and more. High rates of morbidity, mortality, extended hospital stays, and financial hardship can result from complicated appendicitis (Humes & Simpson, 2006).

Acute appendicitis is typically difficult to diagnose due to vague symptoms. The inability to distinguish between appendicitis and other clinical conditions such as pelvic inflammatory disease, gastroenteritis, and UTIs due to the high degree of symptom overlap and lack of a specific test leads to a delay in diagnosis and subsequent treatment. The positive and negative predictive values, or positive and specific predictive values, of a test are based on the prevalence of the disease in the community as well as the test's sensitivity and specificity. There have also been reports of parental tardiness and sporadic stomach problems contributing to diagnostic delay. One of the top five medical negligence categories in which lawsuits against emergency department doctors are filed is misdiagnosis of appendicitis.

In order to reduce morbidity, mortality, length of hospital stay, and financial burden on patients and government hospitals, our study intends to identify these reasons of delay and to educate the public and pertinent specialists so they can refer the patient at the appropriate time and location.

Materials and Methods

A retrospective study conducted at Northwest General Hospital and Research Center Peshawar from January 2021 to October 2022. Total number of patients included in the study were 120. Patients aged above 18, not operated elsewhere, having final diagnosis of acute appendicitis were included while pediatric age group (below 18 years), pregnant women, patients operated primarily elsewhere and then admitted in our hospital were all excluded. Data were gathered on age and gender, symptoms and findings at admission, and the interval between the start of symptoms and hospital admission. Laboratory data were used to gather pre-operative hematological parameters, biochemical parameters, international normalized ratio value, and CRP levels. For every patient, the Alvarado score was computed. Intra-abdominal fluid volumes, fecalith presence or absence,

and appendix diameter were measured using imaging investigations and reports, including USG and CT scans. Evaluations were conducted on the quantity and kinds of antibiotics administered in the hospital following surgery, as well as the management of any issues that arose. Histopathology reports included information on the pathological diagnosis of the resected specimen, appendix diameter, appendix length, omental tissue volume removed with the appendix, and the presence of a perforation in the appendix sample. Patients or their informants were given the opportunity to provide informed permission and were informed of the study's purpose. Following a thorough examination and history, every patient had routine diagnostic tests performed. Blood CP, urine examination, RFTS, S. Electrolytes, chest X-rays, abdominal ultrasound, and abdominal CT scan are among the laboratory tests. Data was entered and analyzed in SPSS version 23 and presented in Excel in the form of tables and graphs.

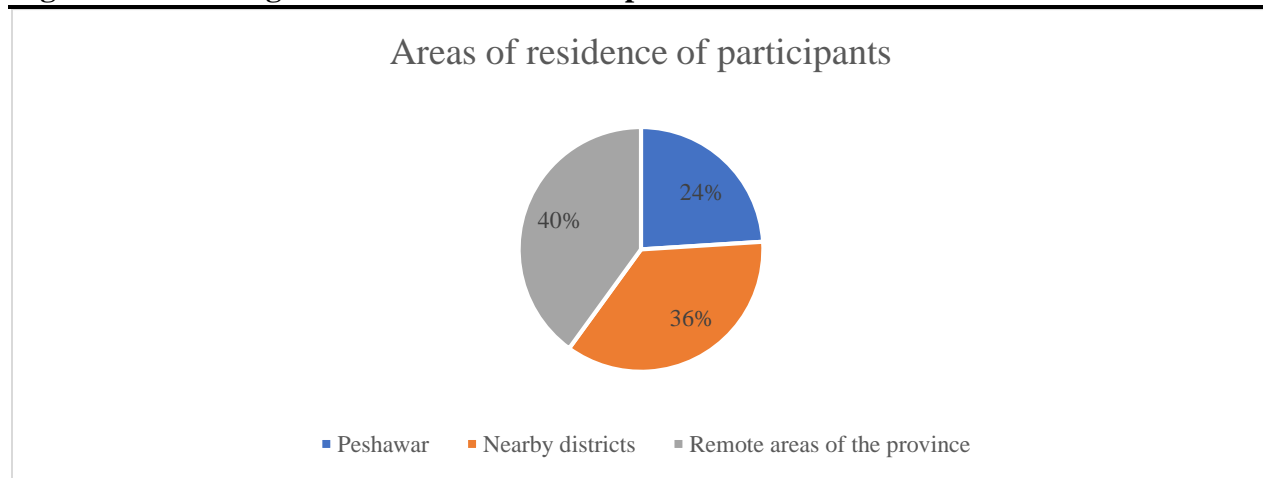
Results

Among 120 patients, age range was 19-65 years. There were 73 (61%) male and 47 (39%) female patients. Age group of less than 25 years was 37 (31%). Between 25–40 years there were 62 (52%) and 21 (17%) were above 40 years. Patients who were discharged from the hospital within a week were 65 (53%), those who recovered within 2 weeks were 25 (21%) while those spending more than 2 weeks in the hospital were 31 (26%), as shown in table 1. Less number of patients presented from Peshawar (29), while mostly from nearby districts (29) and remote areas of Khyber Pakhtunkhwa (48), percentages of which are shown in figure 1.

Table 1: Frequency and percentages of hospital stay of the patients

Hospital stay (days)	Frequency n=120 (%)
1-7	64 (53)
8-14	25 (21)
More than 14	31 (26)

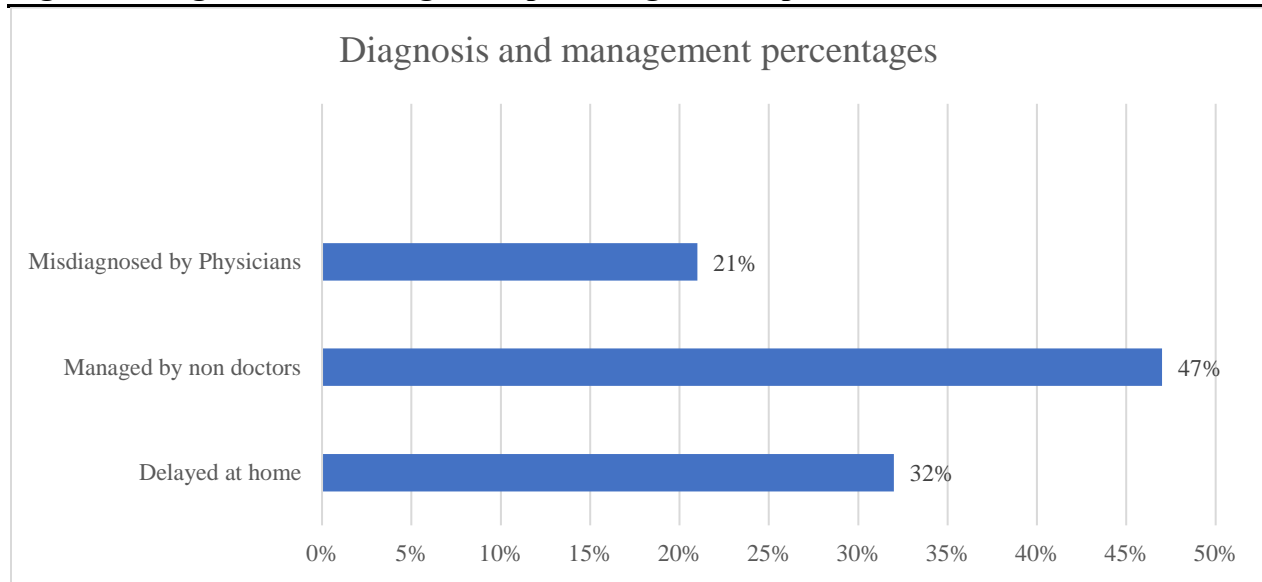
Figure 1: Percentage of areas of residence of patients



Most of the patients that presented late and were mismanaged by non-doctors (57) especially quacks in the villages who give Intravenous antibiotics and over the counter medications to the patients without proper diagnosis of the illness. 38 patients were delayed at home by applying

home remedies to treat their acute appendicitis while 25 patients were misdiagnosed by physicians for another illness than acute appendicitis. Percentages are shown in figure 2.

Figure 2: Diagnosis and management percentages of the patients



Discussion

An appendectomy can be performed laparoscopically or openly (Salati et al., 2008). A later approach results in earlier mobilization and shorter hospital stays (Wilms, 2011; Turhan et al., 2009). Due to the peculiarities of Pakistan's healthcare system, the majority of patients with acute appendicitis are initially seen by general practitioners, medical technicians, quacks, etc. Regrettably, there is a higher chance of perforation and consequent morbidity when a referral is delayed while treating an alternate diagnosis (Salati et al., 2008; Jalil et al., 2011). Sauerland et al. (2010) Appendicitis consequences such as higher perforation rates are caused by delayed diagnosis (Peter et al., 2010; Shaikh et al., 2009). In the literature, causes of delay have received a lot of attention (Paajanen et al., 2013). According to earlier studies, 61.54% of the patients who presented with problems in our study were male. 6,8 Males are affected twice as much in the Salati research (Salati et al., 2008). Our study's maximum hospital stay was over 20 days, but Aly Saber's trial in Egypt was limited to 7 days (Saber et al., 2011).

In our study, doctors missed 23.08% of the patients' diagnoses and complications, but in Ch Chung's study in Hong Kong, doctors missed 22.1% of the delays (Chung et al., 2000) and 23% in a Kashmiri study (Peter et al., 2010). According to a study conducted in Kashmir, 86% of patients with complex appendicitis come from rural locations; in contrast, only 35.38% of the patients in our study came from cities or places close to them (Salati et al., 2008). In our study, there were 23.08% and 30.77% of patients who presented with complex appendicitis as a result of delays at home and poor management by non-doctors; in Salati's study, the corresponding percentages are 12.5% and 53%. It takes more time to go to the hospital because most suburban and rural regions lack adequate roads and transit infrastructure. However, obtaining care from quacks who operate illegally and sell over-the-counter medications has been identified as a significant factor contributing to the delay in seeking medical attention in both rural and urban populations (Sauerland et al., 2010; Peter et al., 2010). In another research, same patient-controlled

factors were blamed for delays in diagnosis and therapy. Another challenge in terms of management is poor management during the early phases of diagnosis, which continues to be a major contributing factor in the postponement of diagnosis and treatment. Children are the most mishandled and hardest to diagnose (Humes & Simpson, 2006). Then, given the structure of Pakistan's healthcare system, the majority of patients with acute appendicitis are initially seen by general practitioners, medical technicians, and quacks (Gomes et al., 2015) next step for the clinician is to decide whether to treat the patient with antibiotics or to observe the patient, or to refer them for surgical evaluation. Antibiotic-treated patients have a masking of their symptoms as they no longer experience discomfort and stop seeking medical care. Regretfully, there is a higher chance of perforation and consequent morbidity when a referral is delayed while treating an alternate diagnosis (Salati et al., 2008; Khalil & Muqim, 2010; Jalil et al., 2011). Sauerland (2010) explored that postponing the diagnosis of appendicitis increases the risk of perforation and the problems that follow.

Retrospective nature and small sample size are the limitations of our study which can be addressed in future studies along with consequences of the delayed acute appendicitis.

Conclusion

Appendicitis consequences can be reduced in terms of morbidity and mortality with early diagnosis and appropriate surgical therapy. These results reaffirm the significance of educating the public to seek medical attention early and at the appropriate location in order to prevent complications. It also teaches other specialties to refer such cases to the appropriate department. It is recommended for the medical personnel and general public to refer the suspicious cases of acute appendicitis patients to general surgeons for better management to prevent consequences.

References

- Ahmed, H. O., Muhedin, R., Boujan, A., Aziz, A. H. S., Abdulla, A. M., Hardi, R. A., & Sidiq, T. A. (2020). A five-year longitudinal observational study in morbidity and mortality of negative appendectomy in Sulaimani teaching Hospital/Kurdistan Region/Iraq. *Scientific reports*, 10(1), 2028.
- Chung, C. H., Ng, C. P., & Lai, K. K. (2000). Delays by patients, emergency physicians, and surgeons in the management of acute appendicitis: retrospective study. *Hong Kong Medical Journal*, 6(3), 254-259.
- Drake, F. T., & Flum, D. R. (2013). Improvement in the diagnosis of appendicitis. *Advances in surgery*, 47(1), 299-328.
- England, R. J., & Crabbe, D. C. G. (2006). Delayed diagnosis of appendicitis in children treated with antibiotics. *Pediatric surgery international*, 22, 541-545.
- Gomes, C. A., Sartelli, M., Di Saverio, S., Ansaloni, L., Catena, F., Coccolini, F., & Gomes, C. C. (2015). Acute appendicitis: proposal of a new comprehensive grading system based on clinical, imaging and laparoscopic findings. *World Journal of Emergency Surgery*, 10, 1-6.
- Humes, D. J., & Simpson, J. (2006). Acute appendicitis. *Bmj*, 333(7567), 530-534.
- Jalil, A., Shah, S. A., Saaq, M., Zubair, M., Riaz, U., & Habib, Y. (2011). Alvarado scoring system in prediction of acute appendicitis. *J Coll Physicians Surg Pak*, 21(12), 753-55.
- Khalil, J., & Muqim, R. (2010). Impact of delay in acute appendicitis. *Pak J Surg*, 26(1), 32-34.
- Kotan, Ç., Köseoğlu, B., Barut, İ., Aras, A., Bilici, S., & Sönmez, R. (2000). *The Comparison of Clinical Features of Acute Appendicitis in Childs, Adults and Elderly Population*.

- Paajanen, H., Grönroos, J. M., Rautio, T., Nordström, P., Aarnio, M., Rantanen, T., & Salminen, P. (2013). A prospective randomized controlled multicenter trial comparing antibiotic therapy with appendectomy in the treatment of uncomplicated acute appendicitis (APPAC trial). *BMC surgery*, 13, 1-7.
- Peter, S. D. S., Aguayo, P., Fraser, J. D., Keckler, S. J., Sharp, S. W., Leys, C. M., & Ostlie, D. J. (2010). Initial laparoscopic appendectomy versus initial nonoperative management and interval appendectomy for perforated appendicitis with abscess: a prospective, randomized trial. *Journal of pediatric surgery*, 45(1), 236-240.
- Saber, A., Gad, M. A., & Ellabban, G. M. (2011). Patient safety in delayed diagnosis of acute appendicitis. *Surgical Science*, 2(6), 318.
- Salati, S., Rather, A., & Wani, S. (2008). Perforated appendicitis-an experience in a tertiary care center in Kashmir. *Internet J Surg*, 21, 1.
- Sauerland, S., Jaschinski, T., & Neugebauer, E. A. (2010). Laparoscopic versus open surgery for suspected appendicitis. *Cochrane Database of Systematic Reviews*, (10).
- Shaikh, A. R., Sangrasi, A. K., & Shaikh, G. A. (2009). Clinical outcomes of laparoscopic versus open appendectomy. *JSLs: Journal of the Society of Laparoendoscopic Surgeons*, 13(4), 574.
- Turhan, A. N., Kapan, S., Kütükçü, E., Yiğitbaş, H., Hatipoğlu, S., & Aygün, E. (2009). Comparison of operative and non operative management of acute appendicitis. *Ulus Travma Acil Cerrahi Derg*, 15(5), 459-62.
- Von Titte, S. N., McCabe, C. J., & Ottinger, L. W. (1996). Delayed appendectomy for appendicitis: causes and consequences. *The American journal of emergency medicine*, 14(7), 620-622.
- Wilms, I. M., De Hoog, D. E., de Visser, D. C., & Janzing, H. M. (2011). Appendectomy versus antibiotic treatment for acute appendicitis. *Cochrane database of systematic reviews*, (11).
- Yılmaz, E. M., Kapçı, M., Çelik, S., Manoğlu, B., Avcil, M., & Karacan, E. (2017). Should Alvarado and Ohmann scores be real indicators for diagnosis of appendicitis and severity of inflammation?. *Turkish Journal of Trauma and Emergency Surgery*, 23(1), 29-33.