

Incidence of Appendicitis in Adults

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ABSTRACT

Background: Appendicitis is a common infection which can lead to serious illness in children as well as adults.

Objective: To assess the incidence of appendicitis in adults.

Study Design: Retrospective study.

Place and Duration of Study: Department of General Surgery, Shalamar Medical & Dental College, Lahore from 1st January 2020 to 30th June 2021.

Methodology: One hundred and eighty cases registered for abdominal pain in right iliac fossa. The appendectomy cases of adults (>45 years) were scrutinized from these cases. Demographic and clinical information was gathered from each appendicitis patient with diagnostic symptoms as well as histopathology and radiology imaging.

Result: Eighty seven were confirmed acute appendicitis with 48 males and 39 females within the age group of 45-75 years. Gangrenous appendicitis was presented in 11.5% and perforated appendicitis was noticed in 31.03% of the total patients.

Conclusion: The incidence of appendicitis was 48.33% in adults.

Keywords: Appendectomy, Perforated, Misdiagnosis

INTRODUCTION

The incidence of appendicitis has been escalating since 1900 century. However during the middle of 20th century the incidence started decreasing and was nearly negligible in western part of the world which surprisingly escalated again worldwide with the increase in industrialization.¹⁻³

It is highly mandatory to understand the pattern of increase of appendicitis cases in industrialized countries as well as newly industrialized world. The reason being the involvement of health funding and management towards minimizing this infections. Appendicitis has been associated with 1 out of 15 cases in west. It can cause morbidity as well as mortality.⁴

About one third of the cases with appendicitis reported in the hospitals have perforated appendicitis.⁵⁻⁷ After year 2000 the load of appendicitis cases have rapidly increased in African and Asian countries. In recent years there are more cases of appendicitis in developing countries that developed ones and need to be providently addressed.^{8,9}

The present study assessed the incidence of appendicitis in Pakistani adults for better understanding of the magnitude of the problem for more efficient treatment and management protocols development.

MATERIAL AND METHODS

This retrospective study was conducted at Department of General Surgery, Shalamar Medical & Dental College Lahore from 1st January 2020 to 30th June 2021. A total of 180 patients with abdominal pain were registered which were than further analyzed and tested for appendicitis. Out of them 87 were confirmed for acute appendicitis making the incidence of appendicitis in adults. All patients above the age of 45 years were enrolled as study participants. Each patient was given an informed consent for participation and was enrolled after his/her agreement. The demographic, clinical, physical examination was conducted by surgeon. Imaging and histopathology were performed with biochemical testing through 5cc blood including complete blood count of the patients. Appendix which was perforated were microscopically identified. Polymorphonuclear leukocytes presence in mucosa or sub mucosa categorized as acute appendicitis. Radiological imaging through USG was performed. Prophylactic antibiotic was given to patients pre-operation. With triple antibiotic cover in complicated cases which continued up till 5-7 days post operatively. Laparoscopic surgery involved three port formation with 10mm working-port right below umbilicus, a port for camera as of 3mm (below supra pubic) and additional 3mm working port (between the latter two ports). Pus was cultured. Appendix vessels were initially cauterized before clipping and

divided post-meso appendix dissection. Appendix base was completely separated with clips and end loops. Midline Mc-Burneyes area was incised in open surgery cases. Each surgery required peritoneal lavages establishment by warm saline assistance prior to wound closure. Pus less <50ml drain was considered as standard before removal. Data was statistically analyzed by using SPSS-24, where Chi square was used, p value < 0.05 was considered as significant.

RESULTS

There were 48 males (55.17%) and 39 females (21.6%) in this study within the age group of 45-75 years. The mean age of the patients was 54.5±5.7 years. About 64.3% of the patients were between the age group of 45-55 years (Table 1).

The various morbidities associated with appendicitis in adults were diabetes, hypertension, cardio vascular disease (CVD) or and chronic kidney diseases (CKD). The highest prevalence of hypertension as 54% was seen in the present study (Fig. 1).

Within the total 87 cases, there were 10 such cases which developed gangrenous appendicitis while perforated appendicitis was noticed in 31.03% of the total patients. One patient who was a known diabetic and CVD patient could not survive the surgery (Table 2).

The major symptoms of the patients included abdominal pain in 90.8% followed by right quadrant tenderness in 73.5% of the patients. Nausea and vomiting as well as raised TLC was noticed in 48.27% and 47.12 % of patients respectively (Table 3).

Patients where the diagnosis was delayed recovered after a hospital stay of 5-7 days while those with perforated appendicitis took 5-9 days for recovery. Those patients who developed post-operative complication required a stay for 5-15 days (Fig. 2).

Table 1: Demographic information of the patients (n=87)

Variable	No.	%
Age (years)		
45-55	56	64.3
56-65	21	24.3
66-75	10	11.4
Gender		
Male	48	55.4
Female	39	21.6

Table 2: Appendicitis classification in patients

Appendicitis	No.	%
Gangrenous	10	11.5
Perforated	27	31.1
Death	1	1.1
Acute	49	56.3

Table 3: Clinical characteristics of patients (n=87)

Symptoms	No.	%
Abdominal pain	79	90.8
Nausea and vomiting	42	48.2
Diarrhoea	21	24.1
Fever	28	32.1
Right quadrant tenderness	64	73.5
Raised TLC	41	47.3

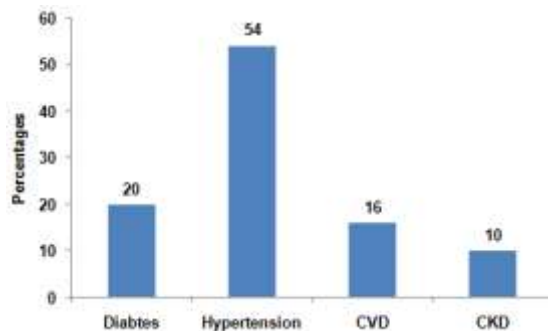


Fig. 1: Associated illness with appendicitis in patients

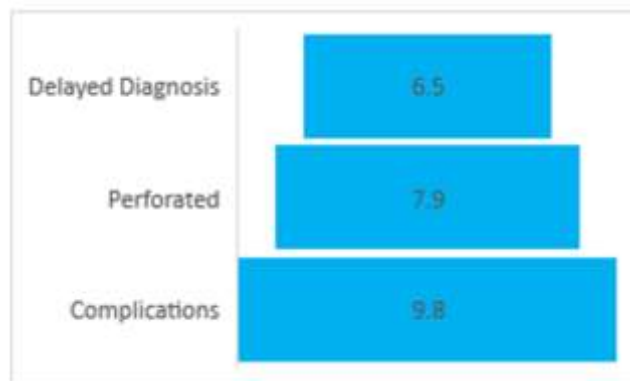


Figure 2: Mean hospital stay in days in various cases of appendicitis

DISCUSSION

Appendicitis is a condition which is caused by inflammation of appendix, is often treated as an emergency through a surgical procedure known as appendectomy.¹⁰ This treatment offers prompt management and also reduces future attacks of appendicitis. This surgical procedure sometime cause fistula formation and post-operative infections, especially in immune-compromised and higher age group patients.^{11,12} Laparoscopic surgeries have potential advantage as it provides better opportunity for treatment as well as aids in diagnosis. Few studies showed that laparoscopic appendectomy is beneficial as it involved less pain.¹³ On the other hand, several studies reveal that higher chances of postoperative infection and abscess formation in patients who went through laparoscopic appendectomy.^{14,15}

Prevalence of appendicitis as reported by meta-analysis was 44.27% whereas findings of Indian study showed its prevalence even more higher upto 62% in females. Advancement in medical technology has made possible several treatments for acute appendicitis. Despite of such progression, mortality and morbidity rate is significantly higher particularly in elderly people. Furthermore, advanced age adversely affects timely diagnosis due to various other underlying conditions.^{16,17}

Timely diagnosis and monitoring common sign and symptoms is necessary to prevent appendicitis and also for the planning of better treatment strategy. An urgent need is required by healthcare professionals for finding and making more promptly diagnostic tool especially for elderly people for the reduction and prevention of perforated appendicitis and sepsis.

CONCLUSION

The incidence of appendicitis was 48.33% in adults with 11.5% gangrenous and 31.03% perforated appendicitis.

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