ORIGINAL ARTICLE

Delay in Appendicetomy due to Preoperative Imaging Results in Increased Complication Rate

MUHAMMAD AZIM KHAN[1], SHOUKAT ALI[2], ALLAH BAKSH PARHAR[3], *WASIM AHMAD[4]*

ABSTRACT

Aim: To determine the frequency of delay in case of suspected acute appendicitis and frequency of complications in patients of acute appendicitis having delay secondary to preoperative imaging

Methods: The present study was carried out in the Department of General Surgery and Emergency, Ghazi Khan Medical College, DG Khan and NMC, Multan from October 2015 to March 2016.A total of 385 patients, both sexes presenting with clinically appendicitis were included in the study.

Results: Age range in this study was 18-40 years with mean age of 28.746±5.25 years. Majority of the patients were between 26-30 years i.e., 42.6%. Most of the patients were 25kg/m group i.e, 57.7%. Delay was seen in 155(40.03%) cases, peri-appendiceal abscess was seen in 10(2.6%) and peritonitis was seen in 13. Frequency of complications due to delay was pri-appendiceal abscess 8 and peritonitis 13 with p value 0.05.

Conclusion: It is concluded from the study that delay in the appendectomy due to preoperative imaging has shown significant impact on complications rate.

Keywords: Appendectomy, Peri-appendiceal abscess, peritonitis

INTRODUCTION

Appendectomy is the 2nd most common surgical cause of acute abdomen and can lead to significant morbidity and mortality of peritonitis[1]. The overall rate of perforated appendicitis is 25.8%[2]. It has been suggested that delay in presentation and diagnosis are responsible for majority of perforated appendices[3]. Appendicitis will present with atypical history and clinical findings and hence the diagnosis is often difficult and may be delayed in youngest and oldest age groups. Therefore, the complication rates are highest in these populations[4]. In children, perforation in 23-73% and a negative appendectomy rate of 15-25% has been reported. A more restrictive surgical approach is supported by the development of modern imaging techniques, in particular USG and computed tomography. Diagnosis accuracy achieved by history and physical examination has remained at about 80% in men and women[5]. Imaging techniques such as USG, CT and MRI were evaluated as diagnostic modalities in acute appendicitis and were shown to improve diagnostic accuracy and patient outcomes. X-Ray is also frequently used for evaluation of patients with acute abdominal pain but are rarely helpful in diagnosing appendicitis. It may be helpful in ruling out other pathology. The use of preoperative imaging is significant contributing factors for delays in appendectomy, and this delay may cause to increase the morbidity in term of complications.

[1]Associate Prof Surgery, GKMC DG Khan,
[2]Prof of Surgery Sahiwal, Medical College Sahiwal
[3]S. Registrar, G.Surgery NH Multan
Correspondence to Dr. Muhammad Azim Khan Email: azimkhan874@hotmail.com; Cell: 0300-7335709)

MATERIAL AND METHODS

The present study was carried out in the Department of General Surgery and Emergency, Ghazi Khan Medical College, DG Khan and NMC, Multan from October 2015 to March 2016.A total of 385 patients, both sexes presenting with clinically appendicitis were included in the study. Pregnant female patients, patients with gangrenous appendicitis and combined generalized peritonitis were excluded. All the patients were operated under general anesthesia by a consultant surgeon having minimum of 5 years of experience. After appendectomy patients were observed in ward and routine antibiotics were given, final outcome were concluded at the end of 48 hours. Total of 385 cases were studied. The age of patients was 18-20 years both male and female.

RESULTS

Age range in this study was from 18-40 years with mean age of 28.746±5.25 years. Majority of the patients was between 26-30 years i.e. 42.6% as shown in Table 1. Mean±SD=28.746±5.25year.There were 240(62.2%) male and 145(37.7%) were female patients (Table 2). Table 3 shows the frequency of peri-appendiceal abscess due to delay.

Table-1: Age distribution

Age (years)	n	%age
18-25	100	26.0
26-30	164	42.6
31-40	79	20.5
36-40	42	10.9

Table-2: Sex distribution

Age (years)	n	%age
Male	240	62.2
Female	145	37.7

Table-3: Frequency of peri-appendiceal abscess due to delay

Delay	Peri-appendiceal absces	
	Yes	No
Yes	8 (5.2%)	147 (94.8)
No	2 (0.9%)	228 (99.1%)
P value	0.009	

Table-4: Frequency of peritonitis due to delay

Delay	Peritonitis	
	Yes	No
Yes	13 (8.4%)	142 (91.6%)
No	-	230 (100%)
P value	0.000	

Table-5: Percentage of patients with delay

Delay	n	%age
No	-	230 (200%)
Total	10 (2.6%)	375 (97.4%)
P value	0.009	

Table-6: Patients with peri- appendiceal abscess

Abscess	n	%age
Yes	10	2.64
No	375	97.4

Table-7: Percentage of patients with peritonitis

Peritonitis	n	%age
Yes	13	03.4
No	572	96.6

Table-8: Stratification of peritonitis with respect to age group

Age (years)	Peritonitis	
	Yes	No
18-25	03(03.0%)	097(97.0%)
26-30	06(03.7%)	158(96.3%)
31-35	04 (05.0%)	075 (95.0%)
36-40	0(0%)	042 (100%)
P value	0.542	

Table-9: Stratification of peritonitis with respect to sex

Gender	Peritonitis	
	Yes	No
Male	8(3.3%)	232(96.7%)
Female	5(3.5%)	140(96.5%)

Table-10: Stratification of peri-appendiceal abscess with respect to sex

Gender	Peri-appendiceal	
	Yes	No
Male	05(2.1%)	235(97.9%)
Female	05(3.5%)	140(96.5%)
Total	10(2.6%)	375(97.4%)

DISCUSSION

Appendectomy is still the most common non-elective surgical procedure performed by general surgeons[7]. Recent studies suggested that peri-appendiceal abscess in selected cases could be managed by nonsurgical treatment without interval appendectomy[8]. In present study delay in the appendectomy due to preoperative imaging has shown significant impact on complications rate (p value 0.05) which is comparable with some studies that supported the outcomes of immediate or prompt appendectomy were better than the outcomes of immediate or prompt appendectomy were better than those of delayed appendectomy produced more postoperative complication. On the other hand, some studies suggested that there was no significant difference of outcomes between early and delayed appendectomy[9]. The present study demonstrates that the severity of pathology and complication rate in patients with acute appendicitis are time dependent and therefore suggests that delaying appendectomy is unsafe. This observation contrasts overnight without an increase in perforation rate, morbidity, and duration of hospitalization[10].The data presented herein suggest the both patient and hospital factors affect the severity of acute appendicitis at the time of operation. However, the positive relationship of increasing patient to hospital interval ratio with pathology grade indicates that patient delay in presenting to emergency room was more profoundly related to worsening pathology compared with in hospital delays. As the ability to minimize patient delay is limited, it is imperative that every effort is made by the hospital and physicians to expedite the evaluation and operation of patients with acute appendicitis. It should be noted that a previous study in 486 patients aged 5–85 years with acute appendicitis demonstrated the severity of disease. Abdominal CT scan has become the main diagnostic tool for patients with acute appendicitis with a high sensitivity and specificity. Scanning of patients with suspected acute appendicitis has been shown to shorten the admission to operating fluid, blurred pericecal fat, mesenteric fat stranding and free air with final pathology results[11].

CONCLUSION

It is concluded from the study that delay in the appendectomy due to preoperative imaging has shown significant impact on complication rate.

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