

Original Article

NEGATIVE APPENDECTOMY AT TERTIARY CARE HOSPITAL, LAHORE: A REVIEW OF OVER 500 APPENDECTOMY CASES

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Objective: To determine the incidence of negative appendicitis among patients undergoing appendectomy at our unit.

Methods: This was an observational descriptive study. We collected data of all patients presenting with acute appendicitis at Department of Surgery, Services Hospital, Lahore from 1st July 2017 to 30th June 2018. Data was analyzed.

Results: A total number of 537 cases were reviewed, spanning a period of 1 year. Out of these 237 were males and 300 were females. The incidence of alternative diagnosis was 2.6%.

Conclusions: On the basis of our results it is concluded the incidence of negative appendectomy in our population is 2.6%. Almost 80% of such cases were female. Further studies on larger scale on local population should be carried out to confirm these findings.

Keywords: negative appendectomy, tertiary care, incidence.

Introduction

Inflammation of the vermiform appendix is known as “appendicitis”. Appendix is a vestigial organ. Appendicitis is the most common abdominal emergency with a lifetime risk of developing appendicitis being approximately 7%.¹ A great variation is seen in the presentation of appendicitis. Despite advances in diagnostic modalities, diagnosis of appendicitis remains essentially clinical.² Due to the risk of perforation and peritonitis, it remains a clinical emergency and is one of the more common causes of acute abdominal pain. The exact etiology of appendicitis remains unclear. Multiple causes have been postulated including obstruction, decreased dietary fiber, pollution and familial susceptibility.³

Appendicitis occurs in all age groups. Appendicitis is most common in the second decade of life after which the incidence continues to decline.⁴ Appendectomy for acute appendicitis is an effective, universally accepted procedure performed more than 300,000 times annually in the United States.⁵ Similarly it is also one of the most common surgical case carried out in Pakistan.⁶ The entity of negative appendectomy still poses a dilemma because it is associated with certain risks and unnecessary costs to both patients and the institutions. The rate of negative appendectomy varies in different studies.⁷ The aim of our study was to review the case of acute appendicitis presenting to us over a 12 month period.

Methods

This was an observational descriptive study carried

out in the Department of Surgery, Services Hospital, Lahore over a period of 1 year from 1st July, 2017 to 30th June, 2018. We collected data of all patients presenting with diagnosis of acute appendicitis. All the cases were evaluated and advised appendectomy after evaluation by a surgeon with minimum of 1 year experience after post graduate fellowship. Data of patients not consenting for study was not included. Patients underwent appendectomy and were admitted to our ward. Analysis of data was done. Specimens were sent for histopathological review to the Department of Pathology, Services Hospital, Lahore. An appendectomy was considered to be negative if there were no histopathological signs of appendicular pathology.

Results

A total number of 537 cases were reviewed, spanning a period of 1 year. Out of these 237 were males and 300 were females. The incidence of negative appendectomy was 2.6%. Results are shown in tables and graphs.

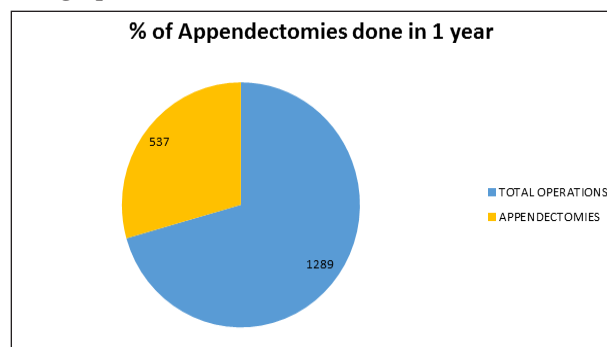


Fig-1: Percentage of appendectomies in 1 year.

Table-1: Percentage of negative appendectomies.

Appendectomies	537
Negative appendectomies	14
Percentage	2.3%

Table-2: Gender distribution of negative appendectomies.

Gender	Negative appenectomy	Percentage
Male	04	28.5%
Female	10	71.42%

Table-3: Alternative diagnosis breakdown (total 14 cases).

Alternative Diagnosis Breakdown (Total 14 cases)	Incidence	Gender breakdown	
		Male	Female
Ruptured Ovarian Cyst	29 (4%)	0	5
Meckel's Diverticulum	14 (14%)	1	1
Mesenteric Lymphadenitis	14 (2%)	1	0
Pyo-salpinx	21 (3%)	0	3
Perforated Gallbladder	7 (1%)	0	1
Worm Bolus	7 (1%)	1	0
Meckel's Diverticulum	7 (1%)	1	0
Percentage		4 (29%)	10 (71%)

Discussion

The first documentation of appendicitis is credited to Sir Claudius Amy in 1736.⁸ Appendectomy remains a commonly performed operation especially in the emergency setting.⁹ During our study it constituted 38.8% of all cases performed. An appendectomy is considered to be negative when a normal appendix is removed following a medical workup for acute abdominal pain. It may occur as a result of other pathologies. The rate of negative appendectomy has been found to be variable in different studies. There has been a steady decrease in the incidence with improving

diagnostic facilities.¹⁰ Historically, an acceptable negative appendectomy rate (NAR) has been between 15% and 25%¹¹ with an even higher rate considered acceptable in women.¹² During our study we found the incidence of negative appendectomy to be 2.6%, which is comparable to the internationally documented rate which has shown a reduction from 23.0% to 1.7%.¹³ 70% of the negative appendectomy were in female. And among these 80% was due to missed pathologies arising from the genitourinary tract. (Table 3) A similar trend was also noticed by other researchers.¹⁴

During workup of the patients we routinely carry out history, examination and basic workup including blood tests, urine examination and ultra-sound. CT scan was not routinely done in our patients. However studies have demonstrated that it may be helpful in difficult diagnosis cases where it may help to reduce the negative appendectomy rate.¹³⁻¹⁵

Our study has a number of shortcomings. It is a single centre study of 1 year duration. All the cases were evaluated and advised appendectomy after evaluation by a consultant surgeon. It is plausible that if a larger sample size covering the whole community were acquired the incidence would be likely higher. Furthermore we did not make use of routine CT scan during workup as it is a resource intensive investigation.

Conclusion

Negative appendectomy is still a cause of concern. It is more likely to occur in female patients. With increasing trend towards radiological studies trend is decreasing.

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Answer Picture Quiz

The radiograph shows bilateral, particularly right sided, peripheral air space consolidation. Consolidation is also seen posteriorly and peripherally in the right lower zone, below the level of the right hilum. The cardiac outline is normal and no pleural effusion or pneumothorax is seen.