

## The Characteristics of routine Histopathological Examination of Appendectomy Specimen: A Study from a Tertiary Care Centre

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### Abstract

Acute appendicitis is one of the most common diseases, needing surgical intervention at its time of presentation. A histologic basis on diagnosis is essential in further workup and management of the patient in view of prognosis of the patient. Resection of the appendix whether via an open or laparoscopic approach is a very common procedure. Patients who were clinically and sonologically diagnosed with acute appendicitis, were taken up for this study. The resected specimen is sent for routine Histopathological Examination (HPE). The Histopathologic data of such patients were studied in PSG hospitals from the period of January 2015 to December 2016. 158 appendectomy specimens were recovered of the said duration and amongst which 85(53.79%) were from males and 73(46.2%) from females. Perforated appendix(0.6%), lymphoid hyperplastic changes (52.38%) was seen at the maximum in the age group of 20 and below and maximum features of acute appendicitis (53.12%) was seen in the age group of 21- 40 years.

**Keywords:** Acute Appendicitis; Histopathology; Lymphoid Hyperplasia.

### Introduction

Acute appendicitis is the most common disease of surgical field in worldwide and affects about seven

percent of the population [1]. Surgeons have many challenges in the diagnosis of this common condition. Diagnosis of acute appendicitis is made primarily on the basis of the history and the physical examination, with additional assistance from laboratory and radiographic findings [7-9]. However histopathologic studies are routinely done after surgery for acute appendicitis. This makes the appendix one of the more commonly received specimens at pathology department. Histopathologic features of appendicitis are myriad. A great number of patients are operated but the specimen may or may not portray evidence of severe involvement [17-19]. This study aims to find the value of routine Histopathological Examination in post operative course of the patient, and estimates the frequency of various histopathological findings in patients diagnosed with acute appendicitis [24,25].

### Objectives

1. To find the value of routine Histopathological Examination of Appendectomy specimen in the postoperative course of the patient.
2. To estimate the frequency of various Histopathological findings in the setting of appendicitis

### Materials and Methodology

This is a retrospective analysis of appendectomies carried out in a single center (PSG IMSR) between January 2015 and December 2016. Specimens were collected from the patients, keeping in mind the inclusion and exclusion criteria mentioned below.

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*Inclusion Criteria*

- Patient admitted in PSG Hospitals who have undergone appendicectomy (laparoscopic or open) diagnosed clinically and sonologically and confirmed with blood tests

*Exclusion Criteria*

- Incidental appendicectomies (Appendicectomies done during other procedures)

The Histopathology reports of appendectomy specimens were retrieved and all specimens had been Formalin-fixed, Paraffin-based and at least reviewed by two pathologists. A total of 158 appendicectomy specimens were received, and analysed based on the prevalence in different sexes, age groups and histopathological feature of the specimens, namely:

- Acute appendicitis
- Perforated appendix
- Lymphoid hyperplasia

- Acute appendicitis with periappendicular inflammation
- Normal appendix

The various histopathological findings in the appendicectomy specimen will be studied and was correlated with the demographic data and the clinical benefit of doing routine Histopathological examination of appendicectomy specimen will be studied.

**Results**

*Based on the Gender Predilection*

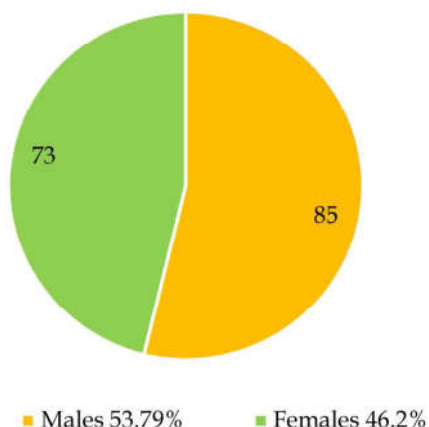
85 males and 73 females underwent laparoscopic appendectomy with a prevalence of 53.79% and 46.2% respectively.

A total of 158 appendix specimens were retrieved from the patients operated from January 2015 to December 2016, amongst which, the following were the histopathological findings.

**Table 1:**

Histopathology Finding	No. of Specimens
Normal Appendix	3
Acute Appendicitis	69
Acute Appendicitis With Periappendicitis	32
Lymphoid Hyperplasia	53
Perforated Appendix	1
Total	158

**Prevalence Between Sexes**



**Fig. 1:** Based on the gender predilection

**Table 2:** Histopathological findings in different age groups

	Normal Appendix	Acute Appendicitis	Acute Appendicitis with Periappendicitis	Lymphoid Hyperplasia	Perforated Appendix
20 yrs. and Below	0	25	5	33	0
21 - 40 yrs.	2	34	12	16	0
More than 40 yrs.	1	10	15	4	1

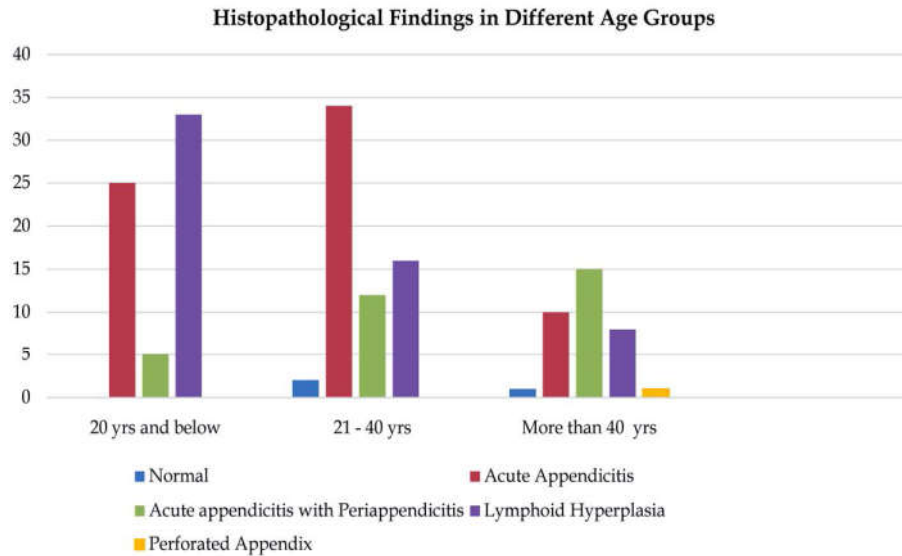


Fig. 2: Based on the histopathological findings in different age groups

## Discussion

In the 1<sup>st</sup> group of patients aged 20 yrs and below, amongst the 63 patients, 25 patients (39.68%) had features suggestive of acute appendicitis, 5 patients (7.93%) had features suggestive of acute appendicitis with periappendicular inflammation and 33 patients (52.38%) had lymphoid hyperplasia. The second group of patients aged 21 to 40 years, amongst 64 patients, 2 specimens (3.12%) received were of normal histological findings, 34 patients (53.12%) had features suggestive of Acute Appendicitis, 12 patients (18.75%) had features suggestive of acute appendicitis with periappendicular inflammation, 16 patients (25%) had features suggestive of lymphoid hyperplasia. In the third group of patients more than 40 yrs, amongst 31 patients, one specimen (3.2%) received had perforation at the tip, one specimen (3.2%) had features suggestive of normal Histology, 10 patients (32.26%) had features suggestive of acute appendicitis, 15 patients (48.39%) with features suggestive of acute appendicitis with periappendicular inflammation and 4 patients (12.9%) with feature of lymphoid hyperplasia

A perforated appendix of 0.6% was seen in the above study. Predominant lymphoid hyperplasia changes were seen in the age group of 20 years and below. Age specific incidence of acute appendicitis followed a similar pattern for males and females, with an increased predominance over the age groups of less than 40 years. Histopathological features of appendix are very difficult to diagnose the stage of

appendicitis and may need new cuts and slides as needed for the patient's prognosis and outcome.

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