



Retrospective Study of Histopathological Findings in Appendectomy Specimens- At Tertiary Care Centre

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Abstract

Background: The appendix is a vestigial hollow tube organ, but it can cause morbidity & mortality also. Histopathological examinations not only give confirmatory diagnosis, through which we can detect many unusual, serious underlying pathology related with appendix, but with the help of this ongoing diagnostic challenges can be solved. Acute appendicitis is the most commonest histopathological finding and it is emergency clinical entity.

Materials and Methods: The retrospective study was conducted in the Department of Pathology, GMC Gondia comprising of 597 patients, over a period of 2 years from April 2021 to April 2023. Clinical data of patients was studied for all the appendectomy specimens received at the department of pathology and histopathology slides were reviewed.

Results: Total 597 cases were studied,

Out of which 383 Patients were males and 214 patients were female age ranged from 5 to 75 years. The predominant appendectomy finding was acute appendicitis 201 cases (33.6%) followed by chronic appendicitis 120 cases (20.12%) followed by acute on chronic appendicitis 84 cases (14.07%) followed by acute suppurative appendicitis 70 cases (11.7%), followed by acute gangrenous appendicitis 50 cases (8.37%), followed by appendicitis with peri-appendicitis 40 cases (6.70%), followed by acute appendicitis with perforation peritonitis 25 cases (4.18%). Among the unusual findings, eosinophilic appendicitis 4 cases (0.6%), tubercular appendicitis 01 case (0.1%), carcinoid 02 cases (0.33%) respectively.

Conclusion: most of the diagnostic findings were acute appendicitis, a few of the essential cases related with appendix were missed out. Hence these serious incidental diagnoses are unavoidable which support the fact that all appendectomy specimens should be sent routinely basis for histopathological examination.

Keywords: Appendicitis (Acute, Chronic, Acute on chronic, Acute suppurative, Acute with Peri-appendicitis, Acute Gangrenous Appendicitis, Acute appendicitis with perforation peritonitis, eosinophilic, tubercular, carcinoid), non-malignant, malignant.

Introduction

The appendix is also called as true caecal apex and vermiform appendix because of its worm like appearance. It is a vestigial organ so it has no use in human body. If it is removed, no harmful effects seen, but acute appendicitis is the most common operative emergency (1,2). Histopathological

examination is gold standard for the diagnostic confirmation of appendicitis. Not only the pathologic diagnosis of acute inflammation and unexpected findings such as presence of malignancy shows the importance of histopathological analysis in every single appendectomy specimen (3).

Appendicular malignancy is very unusual finding, the majority are neuroendocrine tumors (NET/carcinoids) while the remaining are adenoma, adenocarcinoma, lymphomas & Kaposi sarcoma (4). The aim of this study to give the information of the incidence of various lesions of appendix, performs no known useful function in humans, but acute appendicitis is the most common operative emergency (5).

Materials And Methods

It is an retrospective study and was conducted in the Department of Pathology GMC Gondia, which concluded 597 patients, over a period of 2 years from April 2021 to April 2023. Each case including patients age and sex, detailed past and present history and physical examination along with the relevant investigations was carried out. The specimens were fixed in 10% buffered formalin. Gross examination of the appendectomy specimen was carried out. Presence of exudate, perforation, dilatation, obstruction was seen. The cut section was done to see the luminal patency, presence of faecolith, pus, mucus and worms (parasites). 3

sections including one transverse from middle-third, one from resection margin and one longitudinal section from the tip were submitted for histopathology. Following the grossing of the specimens, formalin fixed, paraffin embedded tissue blocks were cut using a rotary microtome and staining was done using Hematoxylin and Eosin.

Results

Total 597 cases were studied, Out of which 383 Patients were males and 214 patients were female age ranged from 5 to 75 years. The predominant appendectomy finding was acute appendicitis 201 cases (33.6%) followed by chronic appendicitis 120 cases (20.12%) followed by acute on chronic appendicitis 84 cases (14.07%) followed by acute suppurative appendicitis 70 cases (11.7%), followed by acute gangrenous appendicitis 50 cases (8.37%), followed by appendicitis with peri-appendicitis 40 cases (6.70%), followed by acute appendicitis with perforation peritonitis 25 cases (4.18%). Among the unusual findings, eosinophilic appendicitis 4 cases (0.6%), tubercular appendicitis 01 case (0.1%), carcinoid 02 cases (0.33%) respectively.

Figure 1 :-

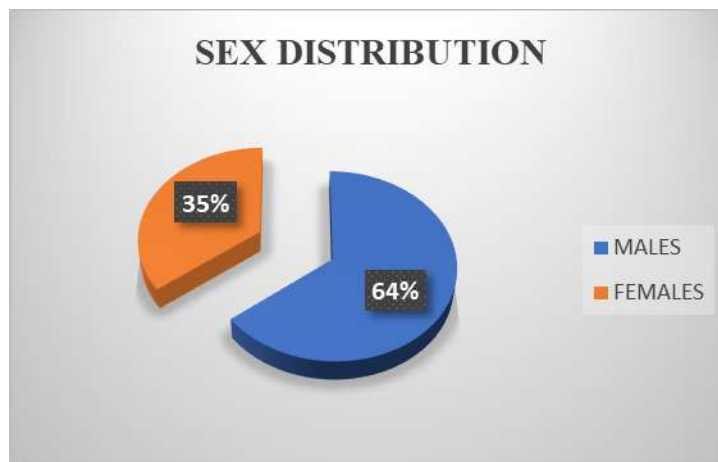


Table 1:-

SEX DISTRIBUTION	TOTAL CASES (597)	PERCENTAGE
MALES	383	64%
FEMALES	214	35%

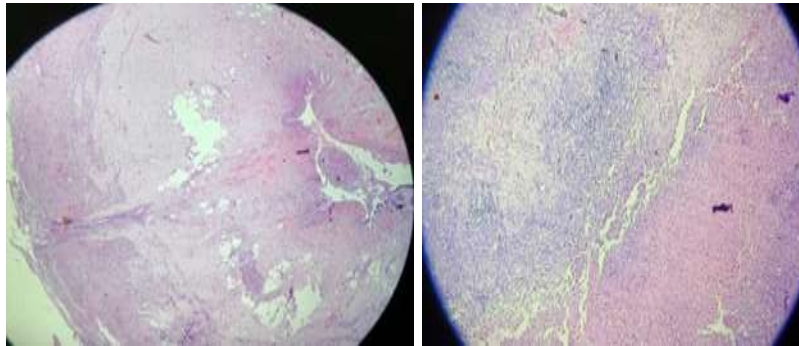
Table 2 –

AGE GROUPS(years)	MALES	FEMALES	TOTALS	PERCENTAGE
5 – 15	30	22	52	8.71 %
16 – 25	151	79	230	38.5%
26 – 35	102	71	173	28.9%
36 -45	65	20	85	14.2%
46 – 55	22	14	36	6.03%
56 – 65	10	07	17	2.84%
66 – 75	03	01	04	0.67%
TOTAL	383(64%)	214 (35%)	597	100%

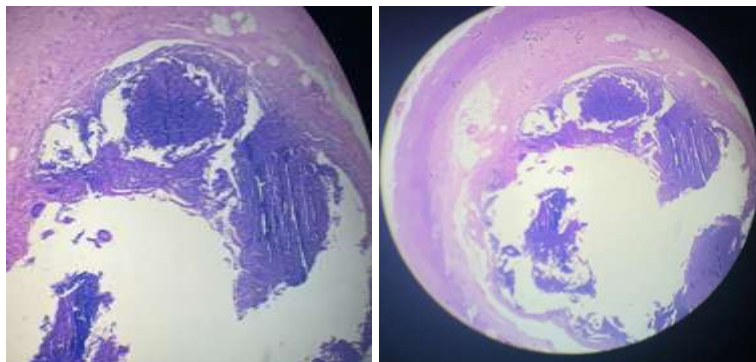
Table 3 – Histopathological Findings –

LESIONS OF APPENDIX	NO. OF CASES	PERCENTAGE (%)
Acute Appendicitis	201	33.6
Acute on Chronic Appendicitis	84	14.07
Acute Suppurative Appendicitis	70	11.72
Acute Gangrenous appendicitis	50	8.3
Acute appendicitis with Peri-appendicitis	40	6.70
Acute appendicitis with perforation peritonitis	25	4.18
Chronic appendicitis	120	20.10
Eosinophilic appendicitis	04	0.67
Tubercular Appendicitis	01	0.16
Carcinoid Tumour	02	0.33
TOTAL	597	100

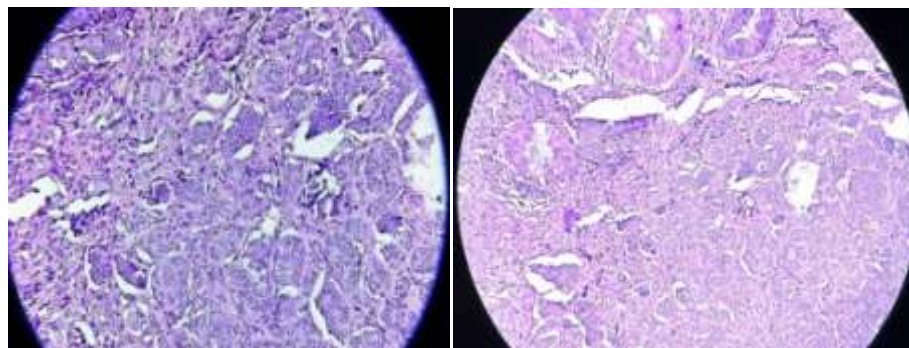
**Figure 2:- MICROSCOPIC FINDINGS
ACUTE APPENDICITIS**



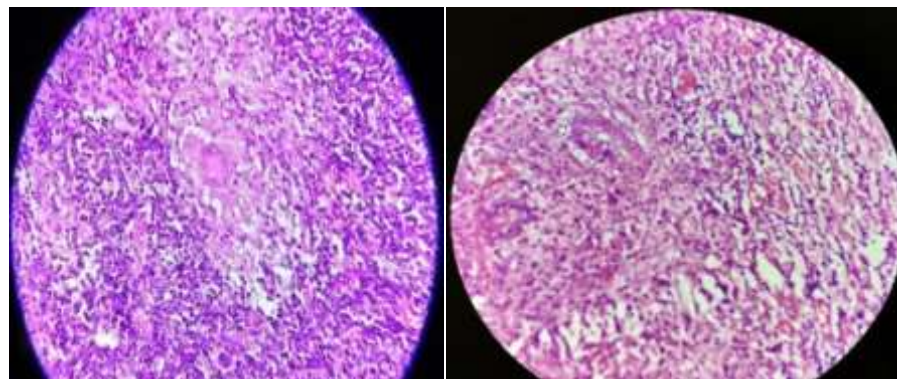
CHRONIC APPENDICITIS



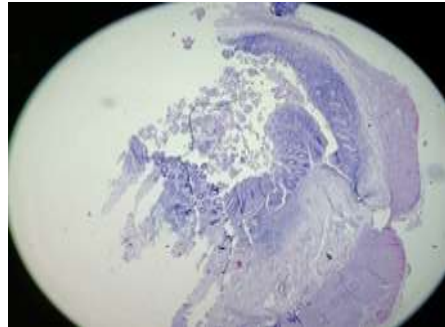
CARCINOID TUMOUR



TUBERCULAR APPENDICITIS



ACUTE PERFORATED APPENDICITIS

**Discussion**

In this study 597 appendectomy specimens were studied in Department of Pathology, Government Medical College, Gondia. The purpose of histopathological examination is first of all to confirmed the clinical diagnosis and if clinicians missed the diagnosis like malignancy it will correct and helps the clinicians to give right treatment to the patient and also help in further treatment planning and management. Acute appendicitis is one of most common diagnosis and the most common indicator for acute abdominal surgeries and appendectomy most common surgical procedures performed in the world (6,7,8). Acute appendicitis mostly occurs in between the ages of 10 and 30 years and mostly in males at puberty. The incidence of appendectomy is lower for males than for females (9,10,11). Mostly cases, 151 (38.5%) were in the age group 16-25 years. Total numbers of cases from 16-35 years were 403 (67.4%), Herd M.E had 60.56% of patients in this age group (12). In the present study 201(33.6%) cases of acute appendicitis which is similar to the results of Makaju et al (34.75%)(13) and Nabipour et al (35.33%)(14). Shrestha had 45.6% cases of acute appendicitis (15). Results of Subedi et al showed 92% cases with acute appendicitis(16). There are 70 (11.72%) cases of acute suppurative appendicitis in our study similar to the results of Zulfikar et al who reported 20.7% cases of acute suppurative appendicitis and Shrestha et al reported 20.8% cases of the same.12 Other studies have reported 51%22 and 48.26% 2 cases of acute suppurative appendicitis. The most common tumor of appendix is Carcinoid tumor. Carcinoids are rare neuroendocrine tumour, for malignancy firm, well circumscribed and yellowish brown lesions . In different studies, Carcinoids found in Appendices ranges from 0.02 to 1.5%.3 In the present study there were 0.5% cases of

Carcinoid tumor. This result is similar to that reported by Zulfikar et al (0.6%)10 and Collin's (0.7%) whereas Duzgun et al and Makaju et al reported it in 0.1% cases(17).

Conclusion

Histopathological examination of every appendectomy specimen is important because not all the appendectomy specimen are correctly clinically diagnosed, histopathology confirms the diagnosis, so that it will easy for surgeon to treat the patient .

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