

Original Research

A histopathological analysis of appendectomy specimens

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ABSTRACT:

Background: Appendicitis is a common acute surgical emergency. The present study was conducted to assess histopathology of appendectomy specimens. **Materials & Methods:** The present study was conducted on 89 appendix specimens. Data such as age, gender etc. was recorded in performa. Histopathological assessment was performed. **Results:** Out of 89 specimens, 52 were of males and 47 of females. Specimens found to be of appendicitis in 14, unusual pathology in 28, carcinoid tumor in 30 and mucinous lesion in 17 cases. The difference was found to be significant ($P < 0.05$). Age group 0-10 years had 6, 11-20 years had 17, 21-30 years had 24, 31-40 years had 21, 41-50 years had 13 and >50 years had 7 specimens. The difference was significant ($P < 0.05$). **Conclusion:** Authors found maximum case in age group 21-30 years with male predominance. Maximum cases found to be of carcinoids tumor.

Key words: Appendix, Histopathology, carcinoid tumor

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INTRODUCTION

Appendicitis is a common acute surgical emergency with over 40,000 cases in the UK every year and the estimated life time risk of appendicitis in the USA is 8.6% and 6.7% for males and females respectively. The diagnosis of appendicitis is largely clinical and appendectomy is the treatment of choice.¹ Delayed diagnosis of appendicitis could lead to complications like perforated appendix, peritonitis, sepsis, increased morbidity and mortality. Right iliac fossa pain can be a presenting complaint of different pathologies that may mimic appendicitis especially in the female population causing diagnostic difficulties and often leads to negative appendectomies.

Acute abdominal pain is one of the most common earliest indicators of any clinical issues. The earliest known case of an appendiceal tumor dates back to 1882. Appendiceal tumors constitute 0.2% to 0.5% of all primary neoplasms seen in the gastrointestinal tract.

This type of tumor is rare compared to other tumors that affect the gastrointestinal tract.²

Obstruction of lumen is the dominant factor in acute appendicitis and although faecoliths and lymphoid hyperplasia are the usual cause of obstruction, some unusual factors could be involved.³ Unusual causes of obstructions are enterobiasis, ascariasis, tuberculosis, carcinoid tumor, primary or secondary adenocarcinoma, lymphoma, dysplastic changes, mucocele, gastrointestinal stromal tumor, eosinophilic granuloma etc. Even though, there are many case reports in English written medical literature, reports with meticulous analysis of all cases with appendicitis are small in number.⁴ The present study was conducted to assess histopathology of appendectomy specimens.

MATERIALS & METHODS

The present study was conducted to in the department of General pathology. It comprised of 89 appendix

specimens. The study protocol was approved from institutional ethical committee. Data such as age, gender etc. was recorded in performa. Histopathological assessment was performed. Results

thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of specimens

Total- 89		
Gender	Males	Females
Number	52	47

Table I shows that out of 89 specimens, 52 were of males and 47 of females.

Table II Histopathological findings in appendectomy specimens

Specimens	Number	P value
Appendicitis	14	0.05
Unusual pathology	28	
Carcinoid tumor	30	
Mucinous lesion	17	

Table II, graph I shows that specimens found to be of appendicitis in 14, unusual pathology in 28, carcinoid tumor in 30 and mucinous lesion in 17 cases. The difference was found to be significant (P< 0.05).

Graph I Histopathological findings in appendectomy specimens

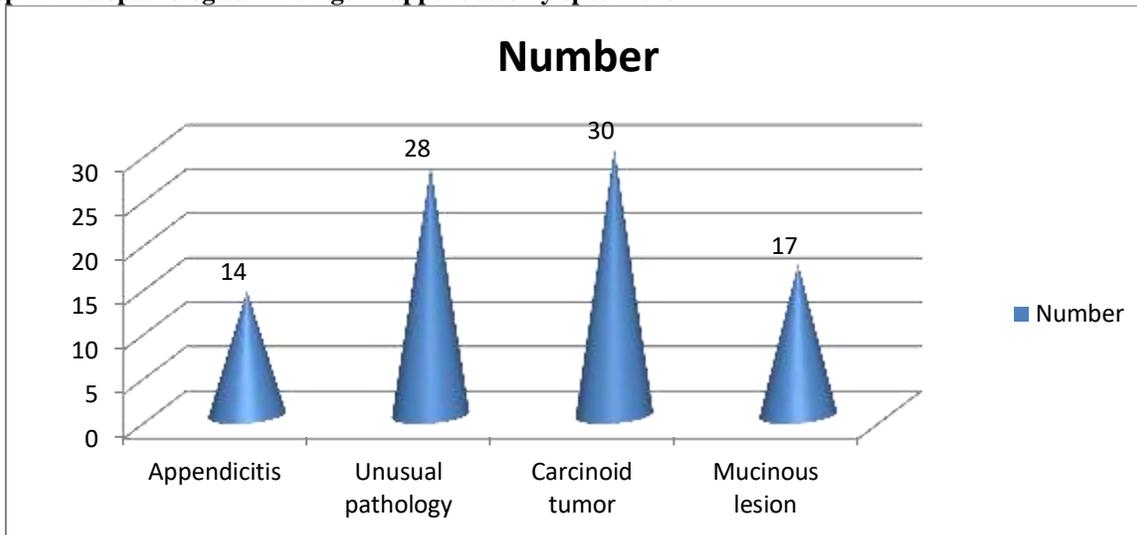


Table III Distribution of cases according to age group

Age group (Years)	Number	P value
0-10	6	0.04
11-20	17	
21-30	24	
31-40	21	
41-50	13	
>50	7	

Table III shows that age group 0-10 years had 6, 11-20 years had 17, 21-30 years had 24, 31-40 years had 21, 41-50 years had 13 and >50 years had 7 specimens. The difference was significant (P< 0.05).

DISCUSSION

There is variation in the practice of routine histopathological examination of appendectomy specimens. Arguments against the practice include the rarity of incidental pathologies that may impact on treatment and also the financial implications of routine histopathological assessments.⁵ Acute appendicitis is the most common surgical emergency for a number of decades and the appendectomy is the most frequently performed abdominal operation. Obstruction of the lumen seems to be the essential for developing an appendiceal infection. Although faecoliths and lymphoid hyperplasia are the usual causes of the obstruction, some unusual factors could also be involved.⁶ The present study was conducted to assess histopathology of appendectomy specimens.

In present study, out of 89 specimens, 52 were of males and 47 of females. Specimens found to be of appendicitis in 14, unusual pathology in 28, carcinoid tumor in 30 and mucinous lesion in 17 cases. Memon et al⁷ found that a total of 238 appendectomies were performed during the study period. The mean age of the patients was 32 years (range, 7-81 years). Adult patients (>16 years) represented 79.4% of the study population. The female sex accounted for 46.6% of all the patients. Of the 238 resected appendix, 211 (88.7%) had histopathology findings consistent with appendicitis. Approximately 1.7% of the 238 specimens were abnormal pathologies other than inflammation of the appendix. The negative appendectomy (normal appendix on histology) rate was 11.3%. The female sex accounted for 59.1% of the negative appendectomies. Adults (>16 years) represented 77.8% of the negative appendectomies.

We found that age group 0-10 years had 6, 11-20 years had 17, 21-30 years had 24, 31-40 years had 21, 41-50 years had 13 and >50 years had 7 specimens. Emre et al⁸ found that out of 790 appendectomy specimens, acute appendicitis accounted for 302 (38.2%) with peak occurrence in the age group 11-20 years (38.9%) and 21-30 years (27.7%) with male predominance (2.34:1). Unusual findings were noted in 44 (5.6%) cases by histopathology. Most common findings included obliterative appendicitis (77.3%), followed by eosinophilic appendicitis (6.8%) and granulomatous appendicitis (4.5%). Other unusual findings include diverticulum, mucocele, carcinoid and signet ring adenocarcinoma of the appendix.

Shrestha⁹ reported the findings of a retrospective analysis of 261,134 patients who underwent non-incidental appendectomies with a NAR of 15.3%. When compared with patients with appendicitis, negative appendectomy was associated with a significantly longer length of stay (5.8 vs. 3.6 days, $P < 0.001$),

infectious complications rate (2.6% vs. 1.8%, $P < 0.001$) case fatality rate (1.5% vs. 0.2%, $P < 0.001$) and total charge-admission. An estimated \$741.5 million in total hospital charges resulted from admissions in which a negative appendectomy was performed. Hence NAR has been recognized as a quality metric in the management of acute appendicitis.

The histological criterion for the diagnosis of acute appendicitis is polymorphonuclear leucocytic infiltration of the muscularis mucosa. The incidence of primary chronic appendicitis as a pathologic or clinical entity has been greatly disputed. Much more frequently recurrent acute attacks may be inappropriately referred to as chronic appendicitis.¹⁰ Extensive fibrosis of the appendiceal architecture implies a chronic inflammatory reaction within the wall, supports the diagnosis of chronic obliterative appendicitis. The appendectomy resolves the chronic appendicitis.

CONCLUSION

Authors found maximum case in age group 21-30 years with male predominance. Maximum cases found to be of carcinoids tumor.

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