Section: Surgery

Original Research Article

A HISTOPATHOLOGICAL STUDY IN APPENDICECTOMY SPECIMENS IN A TERTIARY CARE HOSPITAL IN NORTH EASTERN PART OF INDIA

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Abstract

Background: Acute appendicitis is the most common abdominal conditions requiring emergency surgical intervention. We investigated the spectrum of various histopathological findings in appendicectomy specimens of patients presenting with appendicitis in surgery OPD to find out the latest pattern in eastern part of India. **Materials and Methods:** A retrospective study was conducted in the Department of Pathology and Department of Surgery, Jorhat Medical College and Hospital in Assam. Laparoscopic and open appendicectomy specimens of appendix were obtained between May 2023 to October 2023. The patient's age, gender and clinical information were all recorded. In total, 185 specimens of appendix were examined with the period of 6 months. **Result:** 60% (111 cases) of the 185 cases involved men whereas 40% (74 cases) specimen from women. The age group of 11–20 years old accounted for the majority of the cases (35.13%), second one with the age group of 21–30 years old (28.64%). According to the histological investigation, acute conditions were present in 63.78% of the excised appendix specimens in which ,75 cases of acute appendicitis and 43 cases of acute appendicitis with periappendicitis. 34.05% of cases were chronic appendicitis, including recurring episodes (63 instances). Langhan's huge cells were also observed in an appendicitis case that may have been related to tubercular disease. **Conclusion:** The male preponderance of appendiceal lesions as compared to females while the most common age group was between 11-30 years and relatively uncommon in older age group. According to the histological investigation, acute conditions were present majorly in the excised appendix specimens.

INTRODUCTION

Appendicitis is the most common pathology described in appendix and one of the most common surgical emergency worldwide.[1] It is estimated that as much as 6 % to 7 % of the general population will develop appendicitis during their life time, with the incidence peaking in the second decade of life.[2] Patients usually present with the complains of pain and tenderness in the right iliac fossa. Although recent advances like clinical, hematological and radiological imaging do play a significant role in the diagnosis of acute appendicitis but still histopathological examination remains the gold standard method for the conformation of the appendicitis.[3] Many aetiologies have been suggested for appendicitis all resulting in luminal obstruction, rise in intra luminal pressure, venous outflow obstruction and ischemia. Fecoliths, lymphoid hyperplasia, fibrosis, foreign bodies are found to be the most common cause for luminal obstruction in acute appendicitis.[4] Other incidental findings may include parasitic infestation like enterobius vermicularis, amebiasis, tuberculosis, endometriosis and tumours which can be diagnosed only on histopatologicalexaminations.[5,6] This further emphasizes the importance of histopathological analysis of each surgically excised

appendectomy. There is lacking of data in north eastern part of India and not updated form many years hence we planned study with collaboration with department of surgery in tertiary care hospital.Theaim of the study was to determine the diversity of pathological findings in all surgically excised appendectomy specimens submitted in the given time period correlating with age and gender related frequencies.

MATERIALS AND METHODS

A retrospective study was conducted in the Department of Pathology and Department of Surgery, Jorhat Medical College and Hospital in Assam. Laparoscopic and open appendicectomy specimens of appendix were obtained between May 2023 to October 2023 (6months) from the Department of Surgery, Jorhat Medical College and hospital. The patient's age, gender and clinical information were all recorded. In total, 185 specimens of appendix were examined with the period of 6 months.

RESULTS

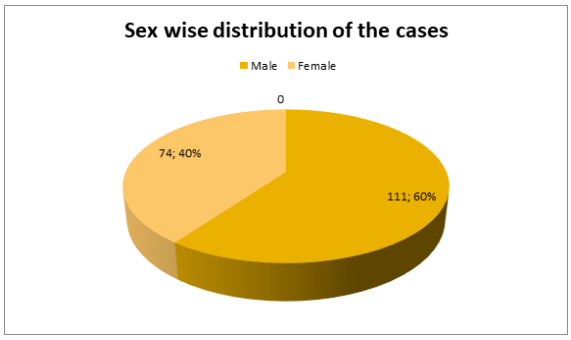

Figure 1: Sex wise distribution of the cases

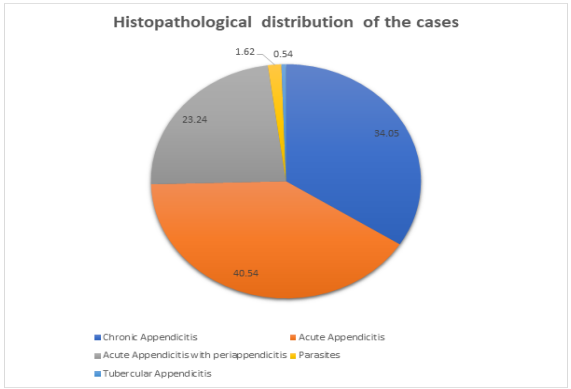

Figure 2: Histopathological distribution of the Appendicitis cases

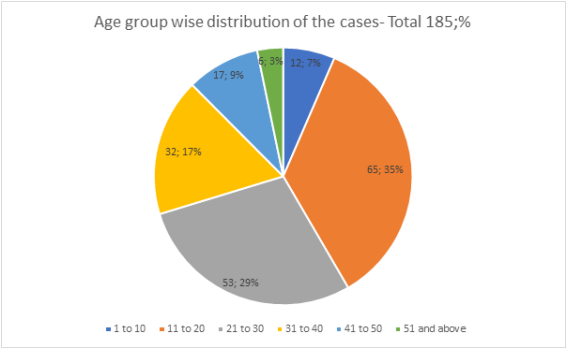

Figure 3: Age wise distribution of the cases

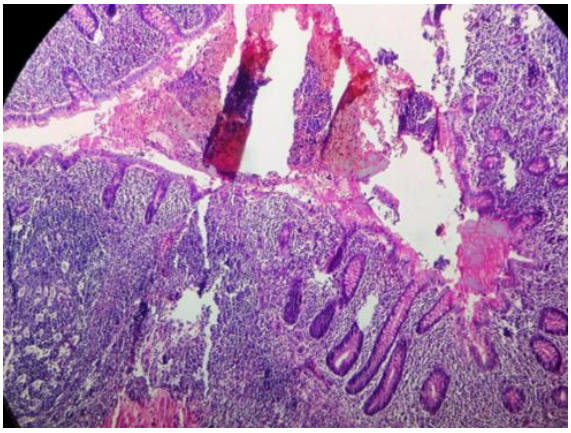

Figure 4: 10x view of acute appendicitis

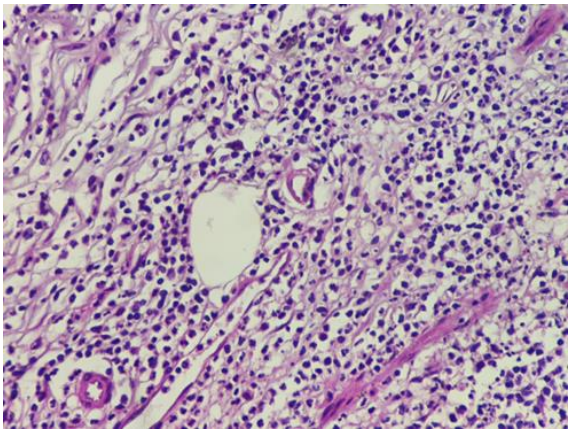

Figure 5: 40x view of acute appendicitis

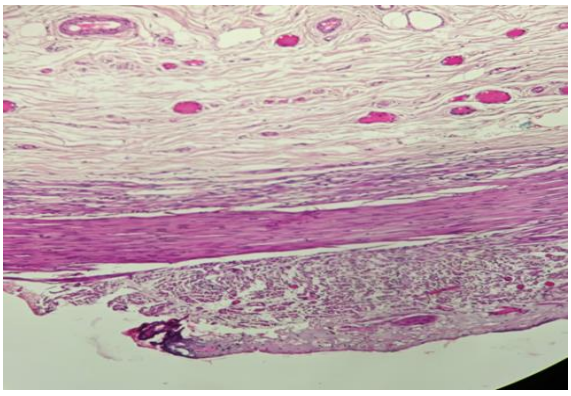

Figure 6: 10x view of Chronic Appendicitis

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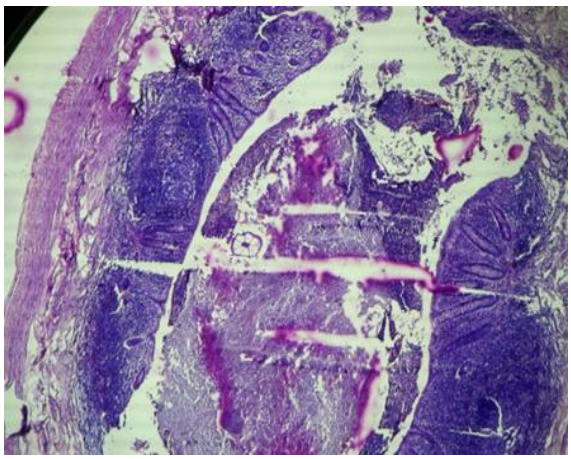

Figure 7: Enterobius Vermicularis inside appendix

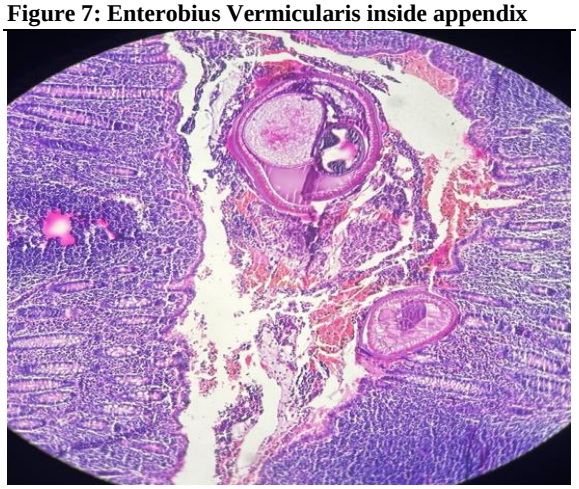

Figure 8: Ascaris Lumbricoides inside Appendix

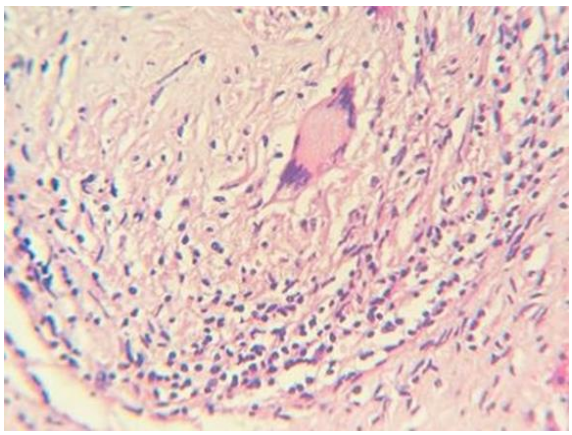

Figure 9: Langhan's Giant Cell inside Appendix, most likely a cause of Tubercular pathology

Table 1: Histopathological distribution of the case-sex wise

Histopathological diagnosis	Male (no)	Female(no)	Total no	Percentage (%)
Chronic Appendicitis	40	23	63	34.05
Acute Appendicitis	45	30	75	40.54
Acute Appendicitis with peri appendicitis	23	20	43	23.24
Parasitic Infestation	2	1	3	1.62
Tubercular Appendicitis	1	--	1	0.54
Total	111	74	185	100%

60% (111 cases) of the 185 cases involved men whereas 40% (74 cases) specimen from women. The age group of 11–20 years old accounted for the majority of the cases (35.13%), second one with the age group of 21–30 years old (28.64%).Population above 50 years of age were the least number presenting with appendicitis at only 3.24%. According to the histological investigation, acute conditions were present in 63.78% of the excised appendix specimens in which, 75 cases of acute appendicitis and 43 cases of acute appendicitis with periappendicitis. 34.05% of cases were chronic appendicitis, including recurring episodes (63 instances). Langhan's huge cells were also observed in an appendicitis case that may have been related to tubercular disease. Parasitic infestations were also seen including 2 cases of Enterobius Vermicularis and one case of Ascaris lumbricoides. A suspected tubercular pathology associated appendicitis case was also found which showed presence of Langhan's giant cells. [Table 1 & Figure 1 to 3].

The Histological specimen's pictures also given here as [Figure 4-9].

DISCUSSION

Amongst age distribution, the age group between 11-20 years consisted of majority of the cases at 35.13% followed by the age group of 21-30 which consists of 28.64% of the cases. Population above 50 years of age consisted the least number presenting with appendicitis at only 3.24% which correlates with the study done by Mandakini M Patel and Rhuta J Shah Dept. of Pathology, Govt. Medical College, Surat, India in 2017,[7] and Similar results were seen in study done at Jawaharlal Nehru Medical College by Divya Rabindranath in Aligarh, India.[8]

Out of the total 185 case 111 cases (60%) were males while the rest were females (74 cases accounting for 40%) which correlates eith study done by I Chamisa Department of General Surgery,

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Prince Mshiyeni Memorial Hospital, University of Kwazulu Natal, Durban, South Africa in 2009,[9] and Kulkarni MP et al in 2017, Department of Pathology, Government Medical College, Miraj.[10]

It has been observed that majority of the histopathological findings of resected appendix specimens were of acute type consisting of 63.78% of the cases, which include 75 cases of acute appendicitis and another 43 cases of acute appendicitis with periappendicitis. Chronic appendicitis including cases of recurrent appendicitis consists of 63 cases accounting for 34.05% of the total which did not correlate with study done by Kulkarni MP et al in 2017, Department of Pathology, Government Medical College, Miraj.[10] where they found chronic appendicitis more prevalent at 47.02%. However, this correlated with studies made by Mandakini M Patel and Rhuta J Shah Dept. of Pathology, Govt. Medical College, Surat, India in 2017.[7]

In our study, incidental finding of tubercular or granulomatous appendicitis consisted of only 1 case which is only 0.54% of the total cases which corresponds with a study done by Bhatta S et al in 2019 in KIST Medical College, Lalitpur.[11]

As per Pai SA et al, enterobius vermicularis is one of the most common parasite seen in appendix,[12] likewise we also got 2 such cases along with a single case of Ascaris Lumbricoides as well.

CONCLUSION

The present study revealed male preponderance of appendiceal lesions as compared to females while the most common age group was between 11-30 years and relatively uncommon in older age group.

The presentation as acute pain abdomen in the ER which was suspected to be cases of appendicitis also revealed that most of the cases consisted of acute appendicitis followed by recurrent appendicitis.

Incidental findings of granulomatous appendicitis and appendicitis with parasites were also found, although very minimal in number.

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