Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 12s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Eosinophilic Appendicitis – A Case Series Of 5 Cases And Review Of Literature

Chaitanya M. Shinde[1], Sujata R. Kanetkar[2]

[1]Junior resident, Department of pathology, KIMS, Karad, Maharashtra, India.

[2]Professor and head, Department of pathology, KIMS, Karad, Maharashtra, India.

***Correspond Author:**

Dr.Chaitanya M. Shinde

Chaitanya vihar, koyana vasahat, karad. (M.S.) 415539.

Email ID: chaitanyashinde1011@gmail.com

Cite this paper as: Chaitanya M. Shinde, Sujata R. Kanetkar, (2025) Eosinophilic Appendicitis – A Case Series Of 5 Cases And Review Of Literature. *Journal of Neonatal Surgery*, 14 (12s), 614-616.

ABSTRACT

Eosinophilic appendicitis, a rare condition mimicking acute appendicitis, involves eosinophil infiltration of the appendix. This study analyzed 268 appendectomy specimens, identifying five cases of eosinophilic appendicitis (2.6% incidence). We suggest appendectomy is beneficial in these cases to prevent future acute appendicitis. The pathogenesis may involve a Type 1 hypersensitivity reaction

Keywords: *Appendicitis; Eosinophilic Appendicitis; Eosinophils.*,

1. INTRODUCTION

While acute appendicitis is the most prevalent surgical emergency worldwide, its diagnosis is confirmed by histopathological examination of appendectomy specimens (1). An early feature of acute appendicitis is eosinophilic infiltration of the muscularis propria (2). Acute eosinophilic appendicitis (AEA) is a variant where the muscularis is infiltrated by eosinophils, not neutrophils, and its symptoms are clinically indistinguishable from typical acute suppurative appendicitis (3).

2. MATERIALS AND METHODS –

A retrospective review of all appendectomy specimens processed by the histopathology section in the department of Pathology between January and December 2024 was conducted. Cases meeting predefined criteria for eosinophilic appendicitis (AEA) were selected. These criteria included transmural eosinophilic infiltration, a count exceeding 25 eosinophils per high-power field within the muscularis mucosa, and the absence of other inflammatory or pathological features (4). Clinical history, physical examination, and routine laboratory findings, with specific attention to peripheral eosinophil counts and stool parasitology, were analyzed for the AEA cases.

Observations and results

Total 189 appendices were examined including those received as part of other operative procedures. Incidence of eosinophilic appendicitis (5 cases) found in appendectomy specimens was 5/189 (2.6%).

Case 1

A 34-year-old woman was diagnosed with acute appendicitis based on clinical and radiological findings. However, histopathological examination revealed dense accumulation of eosinophils in the muscle coat of appendix. This indicated eosinophilic appendicitis.

Case 2

A 10-year-old female presented with right lower quadrant pain associated with vomiting. Histology revealed eosinophil rich inflammation with no evidence of parasite or granuloma.

Case 3

A 47-year-old female presented with recurrent abdominal pain. Clinical and radiological assessment diagnosed it as a resolving acute appendicitis, but histology confirmed eosinophilic infiltration. No identifiable secondary cause was found.

Case 4

45 years old male presented with pain in abdomen. Radioimaging suspected the sigmoid colon diverticuli. Incidental intra op finding was external surface of the appendix appeared congested and swollen. Histopathology revealed eosinophilic appendicitis. On peripheral blood smear examination eosinophilia was noticed (AEC – 1785).

Case 5

A 19-year-old male presented with pain in right lower quadrant and vomiting. Clinical and radiological diagnosis was acute appendicitis. On histology eosinophilic infiltration was noted.

Table 1. Clinical and gross findings in all the five cases

case	Age/sex	Clinical features	History of allergy	Pre-op diagnosis	p.s. eosinophilia	Stool examination	Gross findings
1.	34/F	Pain in abdomen	No	acute edematous appendicitis	Absent	Negative	Congestion
2.	10/F	Pain in abdomen & vomiting	No	acute appendicitis	Absent	Negative	Congestion
3.	47/F	Pain in abdomen	No	resolving acute appendicitis	Absent	Negative	Congestion
4.	45/M	Pain in abdomen	No	Sigmoid colon diverticuli	Present	Negative	Congestion
5.	19/M	Pain in abdomen & vomiting	No	acute appendicitis	Absent	Negative	Congestion

According to data presented in table 1. through detailed clinical assessment, imaging, and laboratory testing, including stool analysis and allergy workup, parasitic and allergic causes were ruled out in five patients with suspected appendicitis. Subsequent histopathology examination revealed eosinophilic appendicitis in all cases. While mean age for the presentation of complaints was 31 years, pain in abdomen was the common chief complaint among all patients. No patient either had history of allergy or any positive findings in stool examination. One case out of five had eosinophilia in peripheral blood. Grossly congestion was the only findings in all the cases.

3. DISCUSSION –

Eosinophilic appendicitis, a rare condition, shares clinical features with acute appendicitis, and its etiology is believed to involve allergic or immune responses, despite being poorly understood. In early times, eosinophilic appendicitis was often associated with Strongyloides stercoralis and granulomas (5). However, these findings were absent in our five cases.

While Aravindan's observation of early eosinophilic infiltration in appendicitis, possibly due to type I hypersensitivity reaction, it's a hypothesis that necessitates extensive further testing. To classify appendicitis cases with acute clinical presentation, macroscopic inflammation, and a microscopic finding of eosinophil-predominant muscularis propria infiltration (and a lack of neutrophils), Aravindan suggested the term 'acute eosinophilic appendicitis.'(6).

The occurrence of eosinophilic appendicitis is substantially lower compared to acute appendicitis. Only 5 cases (2.64%) of the total 189 cases showed features of acute eosinophilic appendicitis. The review article authored by Norman J. Carr postulates that eosinophil counts exceeding 10 per square millimeter (25 per 10 high-power fields) may be clinically significant. Histopathological examination plays an important role in confirming the diagnosis of eosinophilic appendicitis. Pathologically, sections from the wall of appendix revealed eosinophilic infiltration, without evidence of granulomatous inflammation or parasitic infection, and after excluding malignant etiologies of eosinophilia (5).

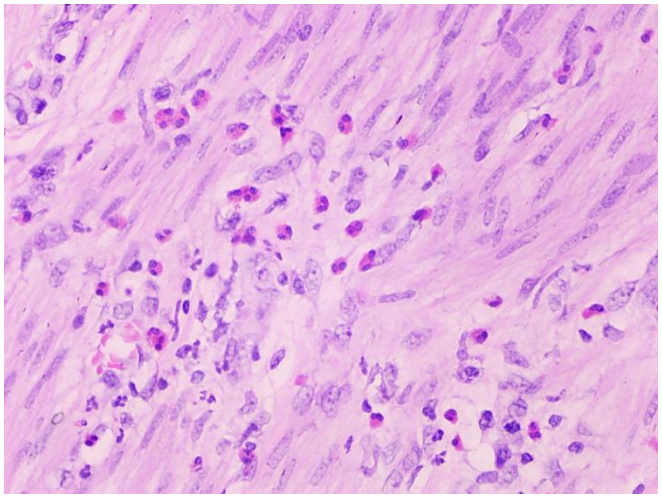

FIGURE 1. Microphotograph of wall of appendix showing dense eosinophilic infiltrate (H&E 400X)

4. CONCLUSION –

While evaluating patients with symptoms suggestive of appendicitis, clinicians can consider eosinophilic appendicitis, a rare condition, as one of the possibilities. Definitive diagnosis requires histopathological examination, and further research is necessary to clarify its pathogenesis and best treatment approaches.

CONFLICT OF INTEREST – None

REFERENCES

[1] Kadi, M., Nasr, A., Shabkah, A. A., Alnahari, R., Alhawi, A., Alyamani, R., & Saleem, A. M. (2022). Histopathological examination of cases with acute appendicitis, A retrospective study at King Abdulaziz University Hospital, Jeddah, Saudi Arabia. Annals of medicine and surgery (2012).

[2] Swati Patel, Himanshu Soni, Vishwadeep Kesarwani, S Nandedkar, M Purohit, Infiltration of Appendix with eosinophils in Acute Appendicitis: A Prospective Study. Trop J Pathol Microbiol. 2021.

[3] Ahn SR, Lee JH. Acute Eosinophilic Appendicitis: A Rare Cause of Lower Gastrointestinal Hemorrhage. Korean J Gastroenterol 2021.

[4] Padmavathy, karthika, Gramani Arumugam, V., Illavarasan, E., & Srinivasan, V. (2020). A demographic study of a series of eosinophilic appendicitis and its correlation with the clinicopathological profile in a tertiary care hospital-a 3-year study. Tropical Journal of Pathology and Microbiology.

[5] Jain, Gaurav & Kanetkar, Sujata. (2013). Case report Eosinophilic appendicitis: Case report of five cases & review of literature. Journal of medical research and practice.

[6] Aravindan KP, Vijayaraghavan D, Manipadam MT. Acute eosinophilic appendicitis and the significance of eosinophil - Edema lesion. Indian J Pathol Microbiol. 2010.

[7] Llera, B., Hanna, I., & Jureller, M. (2024). Eosinophilic appendicitis: an insidious and fortuitous diagnosis. Journal of surgical case reports.

[8] Carr NJ. The pathology of acute appendicitis. Ann Diag Pathol 2000.