

# Eosinophilic Cholecystitis with Lipomatosis: A Rare Case Report and Review of Literature

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# ABSTRACT

Eosinophilic cholecystitis and Lipomatosis of gallbladder are two different diseases, rarely occurring together. Both are diagnosed histopathologically. A 45 years old female who underwent routine elective laparoscopic cholecystectomy for chronic cholecystitis was diagnosed eosinophilic cholecystitis with cholelithiasis and lipomatosis on histopathological examination of gall bladder. This could be first case report of this unique combination. The rarity of the condition prompted us to report this case.

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## Introduction

Eosinophilic cholecystitis and lipomatosis of the gall bladder are two different entities, rarely occurring together Eosinophilic cholecystitis is a rare form of cholecystitis in which the eosinophils are predominant component of inflammatory cells in the wall of the gall bladder. It has prevalence of 0.25-6.4% in all cholecystitis.<sup>[1]</sup> Etiology of eosinophilic cholecystitis is still unknown.<sup>[2]</sup> Whereas lipomatosis of the gall-bladder is an unusual form of hyperplastic cholecystoses in which fatty proliferation of the subserosa of the gall-bladder wall occurs. The pathogenesis is uncertain, but chronic inflammatory changes may play significant role.<sup>[3]</sup> We were unable to find any literature about this rare combination.

#### **Case Report**

A 45 year old female was admitted with complaints of abdominal pain and tenderness and guarding in the right upper quadrant since 1 year which was radiating to the back. She also complained of nausea and increase in the intensity of pain with fullness of stomach after having fatty food. No history of vomiting, jaundice, fever. There was no past history for allergies for anything or any drug intake.

On examination she was stable, afebrile. Icterus, cyanosis, pallor and clubbing were absent. Tenderness and guarding was present in right upper quadrant. Murphy's sign was positive. Her investigation revealed Haemoglobin- 10.7 gm/dl, Total Leukocyte count- 11,700/cu.mm, Differential Leukocyte count: Neutrophils – 75%, Lymphocytes – 23%, Monocyte – 01% and Eosinophils – 01%. Absolute Eosinophil count was  $0.12 \times 10^3$  / cu.mm.



Fig. 1A: Gross image of gall bladder., (1B) : Cut Surface of gall bladder showing thickened wall with adipose tissue in its wall.

Liver function tests showed Total Bilirubin– 0.8 mg/ dl with Direct Bilirubin– 0.2 mg/dl, Total Protein– 7 gm/dl, Albumin- 4mg/dl, A:G-1:3, Alanine transminase – 15 IU/L, Aspartate transminase – 21 IU/L, Urea- 14 mg/dl, Creatinine-0.8 mg/dl and Random Blood Glucose- 121 mg/dl. Serum electrolyte was normal (S. Sodium– 132 mEq/ L and S. Potassium– 4 mEq/L). Stool examination showed no parasite or ova.

Ultrasound examination of the abdomen revealed partially distended gall bladder with a calculus measuring 2.1 X 0.9 cm. Liver, bile duct and rest of abdominal viscera were unremarkable.

She underwent routine elective laparoscopic cholecystectomy under general anaesthesia. Per operatively a single pigment stone was identified in gall bladder and gall bladder wall was thickened.

On gross examination gall bladder measured 9.5 X 3.5 X 2cms [Figure 1A] .Cut surface showed velvety mucosa with thickened wall. Single large brown black coloured stone measuring 2 X 1.5cms was also present [Figure 1B].

Microscopic examination of the gallbladder showed thickened muscularis mucosa and mixed inflammatory infiltrate comprising predominately eosinophils (>90% of inflammatory infiltrate) which were present in all layers of the gallbladder. Significant amount of adipose tissue were seen in the muscularis mucosa [Figure 2A, 2B, 2C].

A histopathological diagnosis of Eosinophilic Cholecystitis with Cholelithiasis and Lipomatosis was made. The patient



Fig. 2A: Gallbladder showing inflammatory infiltrate in all the layer including eosinophils and adipose tissue in muscularis wall. (H&E 40X)., (2B): Marked Proliferation of Mature Adipose Tissue In Muscularis Mucosa Layer. (H&E 40X)., (2C): Gallbladder submucosa showing >90% eosinophils (H&E 400X)

had unremarkable recovery and was discharged without any complication.

# Discussion

Eosinophilic cholecystitis was first described by Albort et al in 1949 in French literature.<sup>[2]</sup> Till 2007, 24 cases of eosinophilic cholecystitis were reported in literature.<sup>[4]</sup>

Etiology of eosinophilic cholecystitis is still unknown; however the postulated causes include allergies, parasites like Clonorchis sinensis and Ascariasis, hypereosinophilic syndrome, and eosinophilic gastroenteritis. Drugs like cephalosporin, erythromycin and a few herbal medicines also may contribute to this entity.<sup>[1,2,4,5,6,7]</sup> Usually it's an acalculous cholecystitis but in rare cases it's seen with gall bladder stones.<sup>[2,7]</sup> In this patient a gall stone was present which is rare association.

There is no specific clinical manifestation of eosinophilic cholecystitis apart from cholecystitis and diagnosis is by histopathological examination. When it is associated with systemic hypereosinophilic syndromes, laboratory investigation reveals peripheral eosinophilia. <sup>[1]</sup>

The diagnosis of eosinophilic cholecystitis is based on histopathology of cholecystectomy specimens when 90% eosinophils infiltration is present within the wall of gallbladder. <sup>[1]</sup>

Eosinophilic cholecystitis has been classified according to cellular infiltrate in the wall of the gall bladder as *eosinophilic cholecystitis* if it comprises of 90 % of eosinophils and *lympho-eosinophilic* if infiltrate comprises of 50-75% eosinophils. <sup>[1]</sup> Table 1 shows reported cases of eosinophilic cholecystitis and lipomatosis in the literature.

Lipomatosis is a rare form of hyperplastic cholecystoses which is non-inflammatory pathologic processes resulting in benign proliferation of the normal gall-bladder tissue elements. In lipomatosis, the gall-bladder wall is thickened by fatty proliferation in the subserosa. <sup>[3]</sup> Its pathogenesis is poorly understood. Some studies considered chronic infection may play significant role. <sup>[3]</sup>

## Conclusion

We present this case because of the rare occurrence of eosinophilic cholecystitis with cholelithiasis and lipomatosis. A pathologist should be aware of this rare condition, since the physical findings of eosinophilic cholecystitis are indistinguishable from manifestation of the common acute cholecystitis. Therefore, there is need to investigate the patient carefully for other associated illnesses, which might have a worse prognosis than cholecystitis itself. Cholecystectomy remains the definitive treatment of this disease.

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# **Competing Interests**

None declared

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S no	Age /sex	Clinical Feature	Eosinophilia	Gall stone	Dilated Common Bile Duct	Histopathological diagnosis	Post operative period	Reference No:
1.	55 yrs/ Female	Abdominal Pain with Jaundice	Absent	Present	Present	Eosinophilic Cholecystitis	Uneventful	1
2.	49 yrs / Female	Abdominal Pain	Absent	Present	Absent	Eosinophilic Cholecystitis	Uneventful	2
3.	60 yrs / Female	Abdominal Pain	Absent	Absent	Absent	Lipomatosis	Uneventful	3
4.	41 yrs / Male	Abdominal Pain	Absent	Multiple	Present	Eosinophilic Cholecystitis	Uneventful	5
5.	30 yrs / Female	Abdominal Pain Nausea , vomiting	Absent	Absent	Absent	Eosinophilic Cholecystitis	Uneventful	8
6.	30 yrs / Female	Abdominal Pain	Present	Multiple	-	Eosinophilic Cholecystitis	Uneventful	9
7.	22 yrs / Female	Abdominal Pain	Present	Multiple	-	Eosinophilic Cholecystitis	Uneventful	9
8.	15 yrs / Male	Abdominal Pain Nausea , vomiting	Absent	Absent	Absent	Eosinophilic Cholecystitis	Uneventful	10

#### Reference

- Sahu.SK, Srivastava P, Chauhan N, Kishore S, Sachan PK, Bahl DV. Eosinophilic Cholecystitis: A Case Report. The Internet Journal of Surgery 2007; 9 (1):4.
- Malik KA. Eosinophilic cholecystitis: An infrequent cause of cholecystectomy. *Pak J Med Sci* 2010; 26(3):724-725.
- 3. Mahajan M, Sharma R, Sharma P, Gupta A. Ultrasonography and computed tomography imaging findings in lipomatosis of the gall bladder. *Biomed Imaging Interv J* 2013; 9(1):2.
- 4. Shakov R, Simoni G, villacin A, Baddoura W. Eosinophilic Cholecystitis, with a Review of the Literature. *Ann of Clin & Lab Sci* 2007; 37(2).
- Singh DK, Shankar R, Gondal R, Malhotra V, Mishra P. Idiopathic eosinophilic cholecystitis with cholelithiasis: A case report and review of literature. Internet Journal of Surgery 2008; 16:2.

- Toyohara M, Yoshikawa M, Fukul H. Eosinophilic Cholecystitis along with pericarditis caused by Ascaris Lumbricoides: A case report. *World J Gastroenterol* 2007; 13(27):3760-2.
- 7. Dabbs DJ. Eosinophilic and lymphoeosinophilic cholecystitis. *Am J Surg Pathol* 1993; 17:497-501.
- Kataria SP, Batra A, Singh G, Boombak E,Kumar S,Sen R. Eosinophilic Cholecystitis Associated with Papillary Hyperplasia of Gall Bladder. *Iranian Journal* of Pathology 2014;9 (4):281-4.
- Choudhury M, Pujani M, Katiyar Y, Jyotsna P L, Rautela A.Idiopathic Eosinophilic Cholecystitis with Cholelithiasis: A Report of Two Cases. *Turkish Journal of Pathology* 2014;30(2):142-144.
- Pan PJ, Chen YC, Tsai JJ. Idiopathic eosinophilic cholecystitis: A cause of hydrops of gallbladder in a young adolescent. *Clinical Gastroenterology and Hepatology* 2013;11(6):26.