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.[1] Etiology of eosinophilic cholecystitis is still unknown.[2] 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.[3] 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 X 10³ / cu.mm.

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 transaminase – 15 IU/L, Aspartate transaminase – 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
had unremarkable recovery and was discharged without any complication.

Discussion
Eosinophilic cholecystitis was first described by Albort et al in 1949 in French literature. Till 2007, 24 cases of eosinophilic cholecystitis were reported in literature.

Etiology of eosinophilic cholecystitis is still unknown; however the postulated causes include allergies, parasites like Clonorchis sinensis and Ascariasis, hyper eosinophilic syndrome, and eosinophilic gastroenteritis. Drugs like cephalosporin, erythromycin and a few herbal medicines also may contribute to this entity. Usually it’s an acalculous cholecystitis but in rare cases it’s seen with gall bladder stones. 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 hyper eosinophilic syndromes, laboratory investigation reveals peripheral eosinophilia.

The diagnosis of eosinophilic cholecystitis is based on histopathology of cholecystectomy specimens when 90% eosinophils infiltration is present within the wall of gallbladder.

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. 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. Its pathogenesis is poorly understood. Some studies considered chronic infection may play significant role.

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.

Acknowledgements
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Competing Interests
None declared

Table 1: Reported cases of eosinophilic cholecystitis and lipomatosis in the literature:

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


