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Calculous Eosinophilic Cholecystitis in Immunocompetent Patient

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Abstract

We report a case of calculous eosinophilic cholecystitis (EC) without symptoms suggesting the presence of Eosinophilic Granulomatosis with Polyangiitis (EGPA). A 68 years old male immunocompetent, presented to the Emergency Department (ED), with a picture of acute calculous cholecystitis. Upon his presentation, laboratory investigations showed no leukocytosis nor elevation of eosinophils count in blood serum, however, neutrophils count in serum was found to be high (76%, normal range up to 70%), then two days later patient underwent laparoscopic cholecystectomy. His final histopathology showed a picture of Eosinophilic Cholecystitis, post-operative detailed history, laboratory test including Antinuclear Antibody (ANA), Antineutrophil cytoplasmic Antibody (ANCA), immunoglobulin, and chest X-ray ruled out the possibility of the systemic disease (EGPA, Churg Strauss syndrome), and confirmed that the eosinophilia was localized to the gallbladder, which caused the picture of acute cholecystitis, and was treated sufficiently with the laparoscopic cholecystectomy.

Keywords

Cholecystitis Eosinophilic, Granulomatosis, Polyangiitis, Churg Strauss Syndrome

1. Introduction

The clinical presentation of eosinophilic cholecystitis could be similar to acute calculous cholecystitis, however, EC is rarer and the exact etiology of it is not known yet [1] [2]. Furthermore, EC is usually seen as an acalculous cholecystitis in immunocompromised or asthmatic patients. The diagnosis of EC, most of the time, is discovered after the final histopathology, which shows eosinophils infiltration in the specimen [3].

EC can be seen with systemic infiltration of the eosinophils, which can cause activation of the immune system and possible vasculitis [4]. Cases with localizing disease of gallbladder might be cured sufficiently with cholecystectomy. On the other hand, others might present with systemic disease and EGPA manifestations (also known as Churg Strauss syndrome).

Those patients usually presented with vasculitis causing adult-onset asthma, joint and muscle pain, numbness of hands or feet, and gastrointestinal bleeding. This necessitates sometimes systemic steroid treatment.

2. Case Report

A 68 years old male patient not asthmatic, was following with orthopedic and physiotherapy clinic for four years prior to his presentation to ED with picture of acute cholecystitis. Patient presented to ED with five days history of right upper quadrant abdominal pain associated with nausea and vomiting for the first time, has past medical history of bilateral osteoarthritis, bilateral planter fasciitis, Achilles tendinitis on medications, however, no inflammatory markers nor antibody panel were requested for him during follow up with orthopedic clinic.

He was vitally stable and his examination revealed abdominal tenderness on his right upper quadrant region with positive Murphy's sign. His laboratory investigations showed no leukocytosis, and no elevation in eosinophils count, only, had high neutrophils count, which was 76% (normal range up to 70%), other laboratory results were unremarkable. Abdominal ultrasound showed distended gallbladder with stones and sludge, largest stone was about 0.4 cm with thickened gallbladder wall and normal caliber common bile duct.

The patient underwent uneventful laparoscopic cholecystectomy, intra-operatively, the gallbladder looked inflamed. His postoperative course was uneventful and he was discharged home on postoperative day one. Interestingly, the histopathology showed eosinophilic cholecystitis with eosinophils infiltration more than 90%. Patient followed up in the clinic and detailed history including (asthma, allergy, bone and joint pain, infection history, VTE history, family history) was taken and found unremarkable except, for the joint pain, also, laboratory investigations to assess the systemic infiltration of the eosinophilia were sent including (antibodies panel, ANCA, ANA, culture for parasite), and chest X-ray, which showed unremarkable results, demonstrated resolution of his symptoms and disease.

3. Discussions

EC is a rare disease and its etiopathogenesis is inadequately understood [1]. It represents less than 16% of all cholecystitis, mainly in immunocompromised patient [2]. In addition, it is even rarer in immunocompetent patients with calculous cholecystitis. Eosinophilic cholecystitis diagnosis grounded on histopathological findings and infiltration of eosinophils in the specimen tissue (≥90% eosinophils) (. عجرملا ردصم ملع روثعلا متى مل!أطخ). However, if a patient comes after

systemic treatment of EGPA, this manifestation might be absent.

EGPA is disease causing vasculitis (inflammation within small blood vessels) due to activation of the immune system, previously called Churg-Strauss syndrome, which can be associated with EC and usually treated with systemic steroids. It can be due to medications intake, following the administration of Ltryptophan, penicillin, cephem, and erythromycin but the exact etiopathogenesis is still unknown [4]. The criteria of EGPA diagnosis include the following (1) bronchial asthma or antipathetic rhinitis, (2) eosinophilia, or (3) fever, weight loss, polyneuropathy, gastrointestinal bleeding, polyarthralgia, myalgia, and purpura. EGPA diagnosis is suspected in the cases whom presented with criteria (1) and (2) followed by features of vasculitis, or in cases in whom all 3 criteria are met. The opinion might be vindicated by histopathological evaluation [5]. In our case, the patient presented with a history of, polyarthralgia, and he was already on treatment by orthopedic when presented to us. In patient with EGPA, laboratory results will show eosinophilia (≥5000 cells/μL), leukocytosis (≥10,000 cells/μL), a high platelet count (≥400,000/μL), elevated serum IgE (≥600 U/mL), and a positive rheumatoid factor. Also, myeloperoxidase ANCA (an ANCA subtype) shows positive results in half of the patients [6]. Eosinophilia in blood serum is generally not presented. It may present only in 10% of all the cases with eosinophilic cholecystitis [7], as in our patient, which we found that he is having normal eosinophilic count in blood serum, also, post-operative laboratory investigations to assess the systemic infiltration of the eosinophilia and antibodies were sent including (antibodies panel, ANCA, ANA, culture for parasite), and chest X-ray, showed unremarkable results.

Similar case report about calculous EC in immunocompetent patient was reported in 2013 in Hindawi Journal by Dr. Mallat urologist in Urology Department, Sahloul Hospital, Sousse, Tunisia, however, they found in their case that, patient have positive eosinophils in peripheral blood test and associated with eosinophilic cystitis (involvement of the urinary bladder) and treated medically before doing laparoscopic cholecystectomy as definitive treatment of the gallbladder disease involvement [8].

Dabbs *et al.* published a retrospective study which reviewed 217 consecutive cholecystectomy specimens and found that the number of EC cases were three times more common in patients with acalculous cholelithiasis [3]. Surprisingly enough, our patient presented with symptomatic calculous cholecystitis in an immunocompetent individual.

4. Conclusion

Eosinophilic cholecystitis is a rare disease mainly seen in immunocompromised individuals as acalculous cholecystitis. Although it can be presented as a calculous cholecystitis in immunocompetent patients. Cholecystectomy can be curative for localized gallbladder disease, if patient is having systemic manifestation further laboratory immune test need to be done to diagnose and treat the patient's condition by systemic therapy.

Consent

Verbal consent has been obtained from the patient discussed in this case report.

Institutional Review Board

The case report waiting to be approved by the Institutional Review Board (IRB) at King Faisal Specialist Hospital and Research Centre, Jeddah for publication.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Abbreviations

EGPA: Eosinophilic Granulomatosis with Polyangiitis
EC: Eosinophilic cholecystitis
OA: Osteoarthritis
ED: Emergency Department
GIB: Gastro-Intestinal Bleeding
ANCA: Antineutrophil cytoplasmic Antibody
ANA: Antinuclear Antibody
VTE: Venous ThromoEmbolism
μL: Microliter