

Eosinophilic Infiltration Causing Biliary Tree Obstruction Without Stricture

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Introduction

- Eosinophilic cholangitis is an extremely rare disease that can cause functional biliary obstruction in the absence of obstructing stones or strictures.¹
- There are fewer than 40 cases of eosinophilic cholangitis reported in the literature.¹
- There are fewer than 10 cases documented without a complicating stricture.^{1,2}
- First line treatment is corticosteroids, similar to other eosinophilic processes such as asthma or eczema.
- Prompt diagnosis carries a good prognosis. Further, early diagnosis can avoid unnecessary surgical interventions.³

Case Presentation

- A previously healthy 60-year-old female presented with symptoms of biliary colic for two days.
- Laboratory results were significant for elevated hepatobiliary enzymes in an obstructive pattern. Alkaline phosphatase of 300 and total bilirubin of 3.8.
- Hepatobiliary iminodiacetic acid (HIDA) scan was performed with an absence of radiotracer excretion into both the biliary tree and the gallbladder. However, MRCP showed no evidence of obstructing stone, stricture, or lesion.
- The patient underwent an uncomplicated laparoscopic cholecystectomy. Direct inspection of the gallbladder conformed significant edema.
- Histology of the gallbladder visualized acute and chronic acalculous cholecystitis with eosinophilic rich infiltrates.
- Post-diagnosis, the patient's eosinophils were noted to be 22%
- She was diagnosed with primary eosinophilic cholangitis and treated with corticosteroids.
- At her one-month follow-up, her signs and symptoms of biliary obstruction had completely resolved.

Images

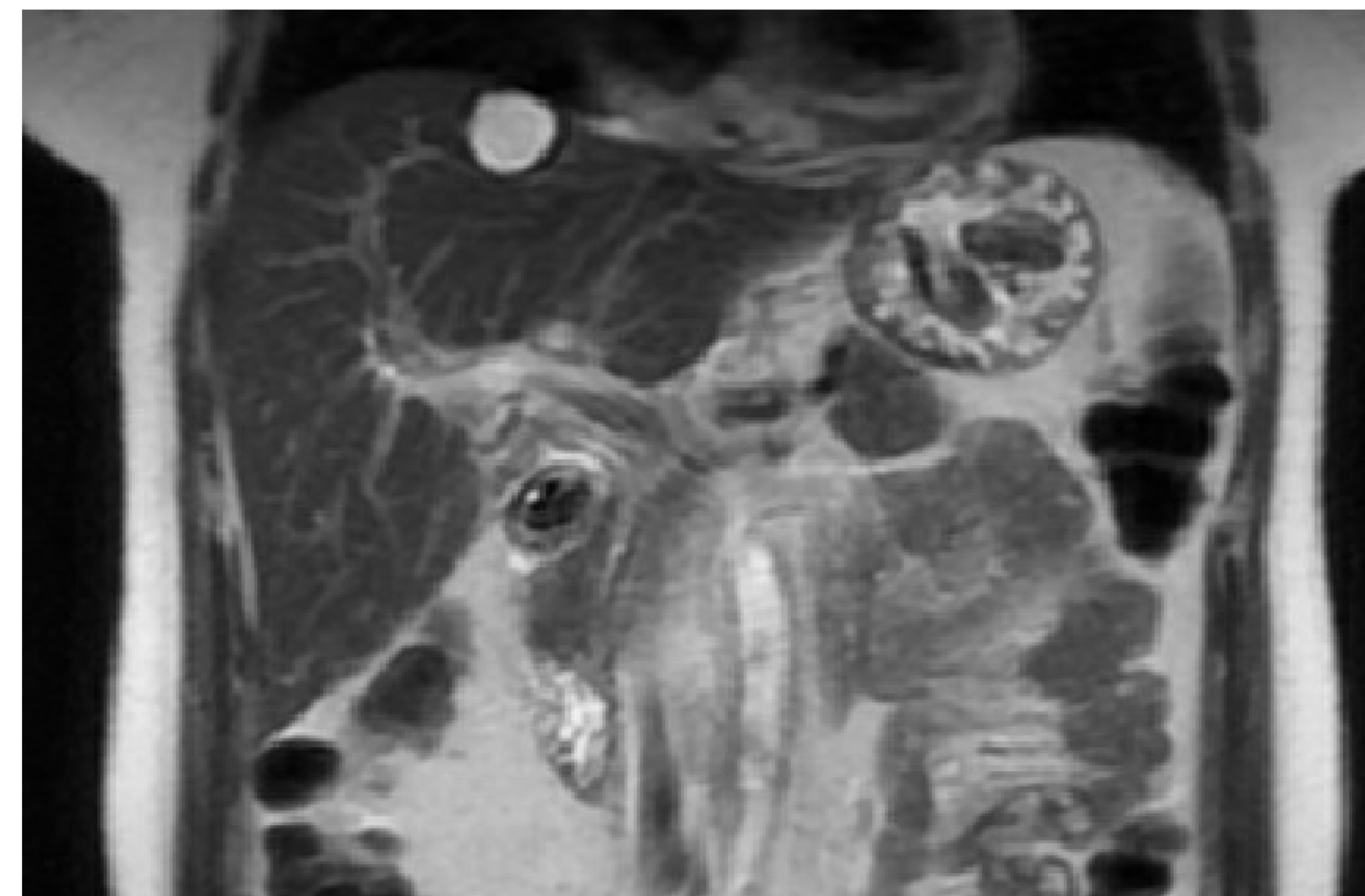


Figure 1 & 2: MRCP with portal edema and no filling defect in the normal caliber common bile duct. Mild gallbladder wall thickening. No cholelithiasis

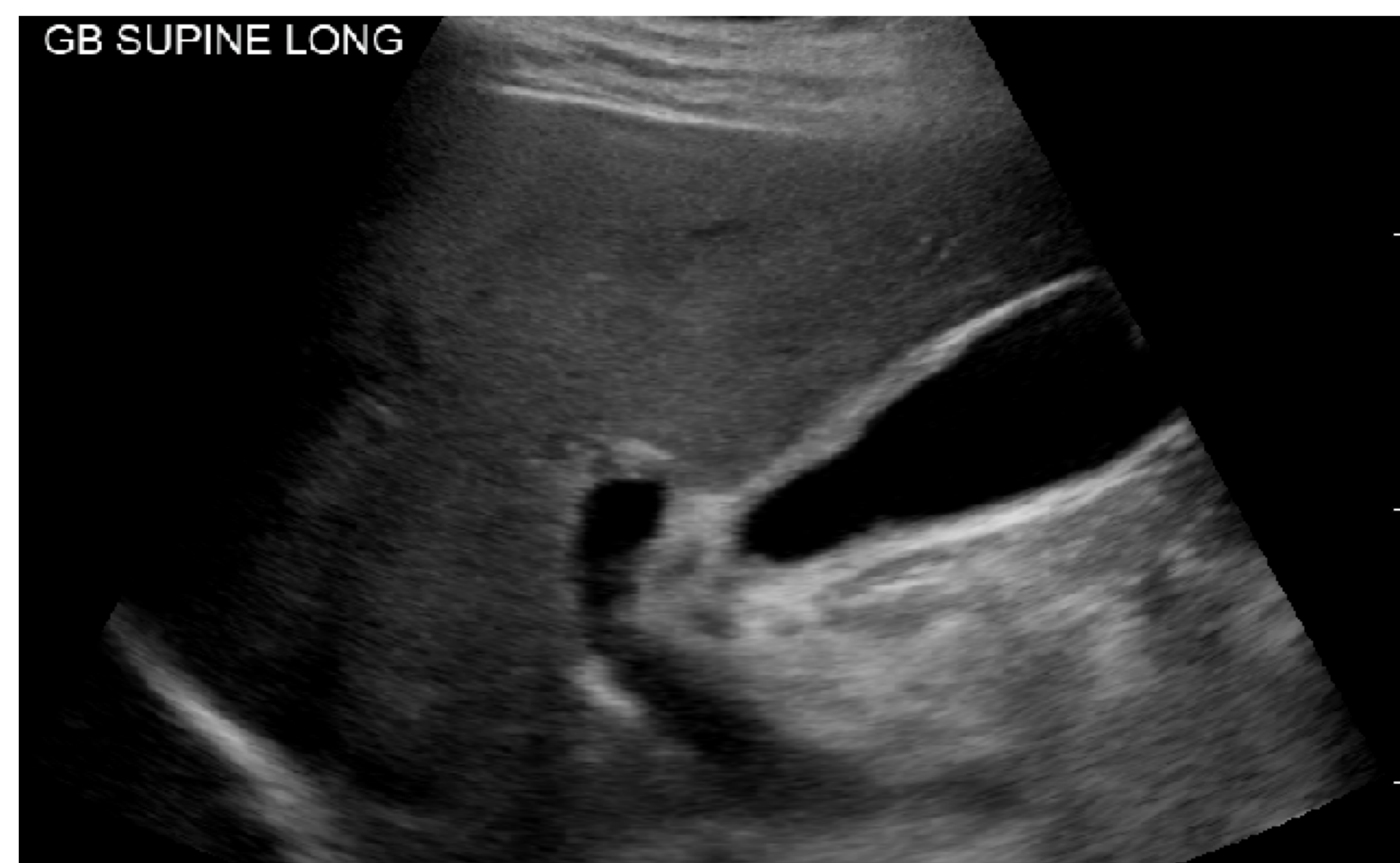


Figure 3: Absence of radiotracer excretion into the biliary tract, including both the common biliary tree and the gallbladder

Discussion

- Eosinophilic Cholangitis (EC) is a rare, self-limiting condition featuring eosinophilic invasion of the biliary tree.⁴
- Laboratory values in EC reflect an obstructive process, but diagnosis is frequently delayed as both symptoms and imaging mimic multiple other biliary conditions including malignancy, primary cholangitis, primary strictures, amongst others.⁴⁻⁶
- Diagnosis of EC is often established when ERCP is performed for dilation of presumed strictures with pathology results with unexpected dense infiltration of eosinophils.^{2,5}
- Although a majority of EC is associated with stricture, EC may also present with obstructive features in the absence of strictures, as seen in this case.⁵⁻⁷

Conclusions

- Eosinophilic cholangitis is an extremely rare cholangiopathy that requires biopsy with demonstration of eosinophilic infiltrates to make a formal diagnosis.³
- Diagnosis is elusive and EC may present symptomatically as intermittent obstruction. Imaging findings in EC may be as minimal as non-specific mild bile duct or gallbladder wall thickening.
- There is little data for the management of refractory or relapsed cases of EC; however, reports have suggested that novel therapies targeting IgE or IL-5, such as omalizumab and mepolizumab, may achieve sustained remission.

References

- Tanaka S, Sakai A, Masuda A, et al. Eosinophilic Cholangitis Without Biliary Stricture After the Treatment of Eosinophilic Esophagitis. *ACG Case Rep J*. 2019;6(6):e00099. Published 2019 Jun 26.
- Nashed C, Sakpal SV, Shusharina V, Chamberlain RS. Eosinophilic cholangitis and cholangiopathy: a sheep in wolves clothing. *HPB Surg*. 2010;20(10):906-916.
- Keyal NK, Adhikari P, Baskota BD, Rai U, Thakur A. Eosinophilic Cholecystitis presenting with Common Bile Duct Sludge and Cholangitis: A Case Report. *JNMA J Nepal Med Assoc*. 2020;58(223):188-191.
- Matsumoto N, Yokoyama K, Nakai K, et al. A case of eosinophilic cholangitis: imaging findings of contrast-enhanced ultrasonography, cholangioscopy, and intraductal ultrasonography. *World J Gastroenterol*. 2007;13(13):1995-1997.
- Li W, Jiang F, Li X, Li H, Zheng Z. A rare case of eosinophilic cholangiopathy. *Int J Immunopathol Pharmacol*. 2020;34:2058738420941752.
- Walter D, Hartmann S, Herrmann E, et al. Eosinophilic cholangitis is a potentially underdiagnosed etiology in indeterminate biliary stricture. *World J Gastroenterol*. 2017;23(6):1044-1050.
- Motoya M, Takai S, Moriya H, et al. Sustained Eosinophilic Cholangitis Due to a Mite Allergy Mimicking Sclerosing Cholangitis. *Intern Med*. 2022;61(16):2477-2482.

