

Cystic Lymphangioma of the Gallbladder in a 47-Year-Old Woman

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Background	A female patient underwent abdominal CT imaging for an unrelated indication. An incidentally identified gallbladder mass raised concern for lymphangioma.
Summary	A 47-year-old woman underwent an abdominal CT scan that incidentally identified a 4 × 7 cm cystic gallbladder mass with avascular septations, suggestive of a gallbladder lymphangioma. Notably, the patient was asymptomatic for biliary issues. The mass was laparoscopically resected electively, with final pathology confirming a diagnosis of cystic lymphangioma. This presentation highlights the rarity of gallbladder lymphangioma, with only 16 prior cases documented in the literature. While our patient remained asymptomatic, approximately half of reported cases present with symptoms mimicking cholecystitis.
Conclusion	We present a rare case of a cystic lymphangioma incidentally identified within the gallbladder of a 47-year-old female on CT imaging. The mass was successfully resected without complications or cyst rupture.
Key Words	gallbladder lymphangioma; cystic

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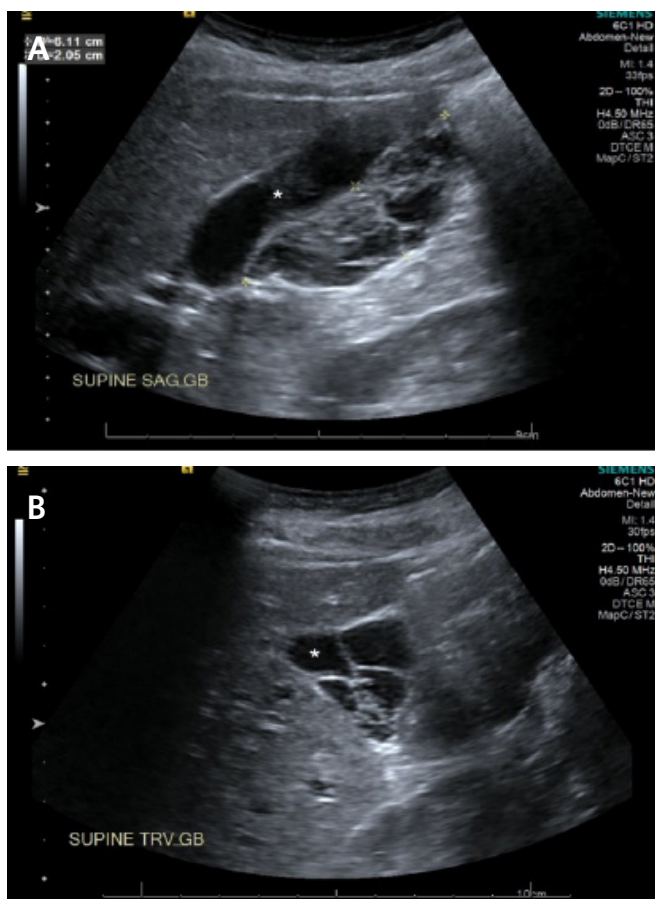
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Case Description

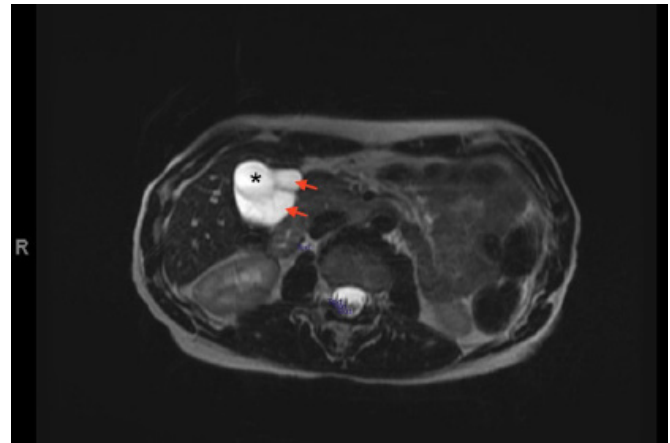
A 47-year-old woman underwent an abdominal CT scan in the outpatient setting to investigate hematuria. An incidental finding of a gallbladder mass was identified. Subsequent abdominal ultrasound revealed a 12 × 37 × 67 mm cystic lesion with avascular septations (Figure 1). Further evaluation with magnetic resonance imaging (MRI) and magnetic resonance cholangiopancreatography (MRCP) showed a high T2 signal lesion located posteriorly and medially within the gallbladder fossa (Figure 2).

Figure 1. Gallbladder Pathology. Published with Permission



Sagittal (A) and transverse (B) views: Gallbladder (*) demonstrating a cystic mass with septations.

Figure 2. T2-weighted MRI. Published with Permission

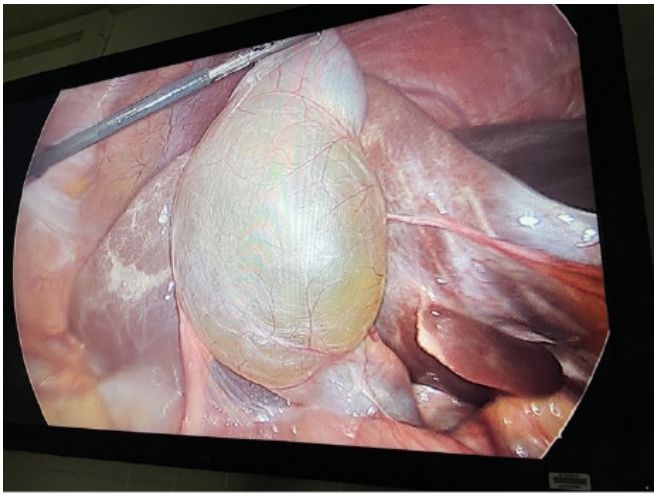


Cystic mass with well-defined margins (red arrows) located posteromedial to the gallbladder (*). Septations identified on ultrasound are less conspicuous but still visible on MRI (within the red arrows).

Magnetic resonance imaging demonstrated poorly visualized intralesional septations without evidence of solid components, local invasion, cystic duct obstruction, or involvement of surrounding structures. No communication with the biliary tree or gallbladder wall thickening/cholelithiasis was identified. Gallbladder lymphangioma was the leading differential diagnosis, with loculated fluid collections secondary to prior inflammation considered less likely. Following pre-surgical consultation, laparoscopic cholecystectomy was recommended for definitive management. The surgery was successful with no intra- or postoperative complications.

Laparoscopic cholecystectomy was performed using a standard technique with great care to avoid violation of the fluid-filled mass occupying the gallbladder fossa (Figure 3). Gentle retraction with an atraumatic bowel grasper and blunt dissection with minimal electrocautery facilitated safe dissection around the mass. The well-defined avascular plane between the mass and the cystic plate enabled a straightforward resection.

Figure 3. Cephalad Retracted Gallbladder, Revealing Cystic Mass. Published with Permission



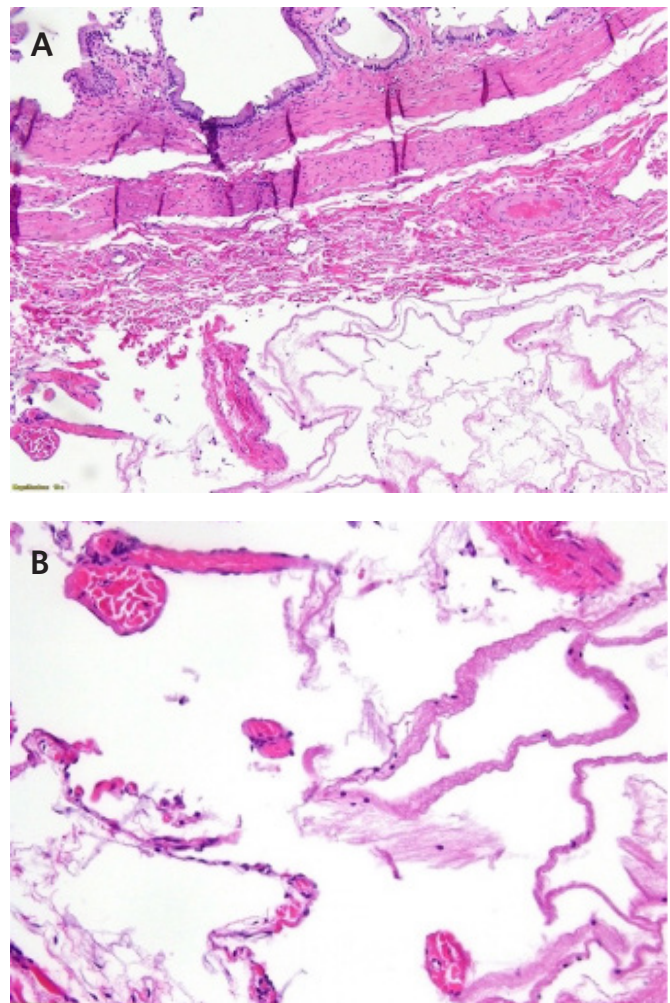
Macroscopic examination of the resected gallbladder revealed a multiloculated cyst measuring 59 × 36 mm on its surface (Figures 4 and 5). The cyst contained clear fluid, and the cystic duct measured 1 mm in diameter and was patent. No calculi, mucosal masses, or polyps were identified within the gallbladder lumen. The final diagnosis based on histopathology was cystic lymphangioma.

Figure 4. Resected Gallbladder with Cystic Mass. Published with Permission



The cystic artery and duct are clipped and visualized at the inferior aspect of the gallbladder (arrow).

Figure 5. Histologic Analysis of Gallbladder Specimen (H&E Stain). Published with Permission



(A) Gallbladder wall and cystic duct margin. (B) Cystic structure consistent with lymphangioma identified on the serosal surface of the gallbladder.

Discussion

Lymphangiomas are benign malformations of the lymphatic system arising from abnormal development of lymphatic cisterns. These lack communication with the larger lymphatic network, likely due to fetal developmental issues in most cases.¹ However, adult presentations suggest the possibility of acquired forms triggered by local lymphatic blockage from trauma, inflammation, or radiation.¹ Approximately 95% of lymphangiomas occur in the head and neck region, with the remaining 5% occurring elsewhere in the body.² Histologically, they are categorized as simple, cystic, or cavernous, with cystic being the most prevalent type in gallbladder involvement.^{3,4} Gallbladder lymphangiomas are exceptionally rare, with this case representing only the 17th reported instance in the literature. Unlike most lymphangiomas, which typically present by

age 2, abdominal lymphangiomas, including those in the gallbladder, often evade detection until adulthood due to their propensity for asymptomatic presentation.⁵ Up to 40% of these lesions present in adulthood, with nearly all reported gallbladder lymphangiomas (14/16) identified in this age group. Half (9/16) were symptomatic, presenting with isolated right upper quadrant pain or with additional symptoms indistinguishable from acute cholecystitis (fever, nausea, vomiting).²⁻⁹ The remaining cases were incidentally discovered during surgery or imaging studies,^{1, 7, 10-14} as observed in our patient.

Imaging plays a crucial role in diagnosing gallbladder lymphangioma, but differentiation from other cystic lesions can be challenging. Ultrasound typically reveals an anechoic, septated cyst, while CT or MRI often demonstrate a simple or multiloculated cyst within the gallbladder fossa.¹² However, CT findings are non-specific, leading to a broad differential diagnosis, including septate gallbladder, extrahepatic biliary cystadenoma, and pseudo-cyst.¹ Intracystic hemorrhage can further complicate CT diagnosis, as reported previously.⁵

Magnetic resonance imaging, including MRCP, offers superior visualization of the cyst's relationship to the gallbladder, cystic duct, and other biliary structures, making it particularly valuable in the preoperative workup.^{4,11} Definitive diagnosis ultimately relies on pathological analysis of the resected mass.

Due to the potential for local invasion, laparoscopic cholecystectomy with negative margins is the definitive treatment for gallbladder lymphangioma.¹⁵ Malignant transformation (lymphangiosarcoma) is exceptionally rare, with only one reported case arising from recurrent inguinal cystic lymphangioma and chronic lymphedema.¹⁶ Given this extreme rarity, Yu and coauthors do not recommend modifying the laparoscopic approach for gallbladder lymphangioma.

Minimally invasive laparoscopic surgery is feasible once preoperative MRI or intraoperative visualization excludes pericholecystic invasion or significant adhesions.⁵ Prognosis is excellent, with no reported cases of recurrence or mortality to date.¹¹

Conclusion

This case report describes an incidentally discovered, asymptomatic cystic lymphangioma of the gallbladder incidentally detected on outpatient CT imaging in a 47-year-old woman. Cystic lymphangiomas of the gallbladder are exceedingly rare, with only 16 previously reported cases in the literature. The mass was successfully resected laparoscopically without complications or cyst rupture.

Lessons Learned

Cystic lymphangiomas of the gallbladder are rare presentations, typically manifesting as a septated cystic mass. Due to the potential for worsening cholestasis and local invasion, surgical resection via complete cholecystectomy is the definitive treatment. Given the low recurrence risk after a total cholecystectomy, short-term follow-up is generally sufficient.

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