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Case Reports

# Gallbladder adenomyomatosis presenting with nausea in an adolescent: A case report

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## ABSTRACT

Gallbladder adenomyomatosis is characterized by invagination of the gallbladder mucosal epithelium into the muscularis propria, which results in the formation of an intramural diverticulum. It primarily affects adults and rarely impacts children and is generally considered a benign disorder. The increased use of high-resolution ultrasonography in children has facilitated the diagnosis of gallbladder lesions in young patients. Various imaging modalities can be utilized to achieve a definitive diagnosis. We report a 17-year-old adolescent girl who presented with nausea and was diagnosed with adenomyomatosis. Although abdominal ultrasonography initially suggested a choledochal cyst, magnetic resonance cholangiopancreatography (MRCP) confirmed that the lesion represented gallbladder adenomyomatosis rather than a choledochal cyst. Following consultation with a pediatric surgeon, a cholecystectomy was planned. This case contributes to the limited pediatric literature on gallbladder adenomyomatosis.

**Keywords:** Adolescent, gallbladder adenomyomatosis, nausea

## INTRODUCTION

Gallbladder adenomyomatosis is characterized by mucosal hyperplasia that leads to mucosal invagination into the thickened muscle layer, forming Rokitansky-Aschoff sinuses (1). The cause of this benign gallbladder wall disease is unknown (2). Patients are mostly clinically asymptomatic and the disease is detected incidentally when ultrasonography is performed for another reason. Although predominantly affecting adults, rare pediatric cases have been reported (3). Imaging modalities, particularly ultrasonography, are essential for diagnosis (4). Ultrasonography, computed tomography, and magnetic resonance imaging are commonly utilized imaging modalities (2).

Adenomyomatosis may be characterized on abdominal ultrasonography by 'comet-tail' reverberation artifacts within the thickened gallbladder wall. However, this imaging finding alone does not allow a definitive distinction as to whether the lesion represents benign adenomyomatosis or a malignant pathology. MRI and MRCP can detect wall thickening, focal sessile masses, and the hourglass configuration, and may also demonstrate the 'pearl necklace sign,' which represents fluid-filled intramural mucosal diverticula known as Rokitansky–Aschoff sinuses. This sign is highly specific (92%), although it is present in only about 70% of cases (5).

In this case report, a patient diagnosed with adenomyomatosis was initially scheduled for surgery owing to the presence of symptoms. Nevertheless, as the patient's family declined surgical intervention, follow-up was conducted through regular consultations with the pediatric surgery department.

## CASE REPORTS

A 17-year-old girl, presenting with nausea for three months, was taken to the pediatric gastrointestinal clinic. The patient's only presenting symptom was nausea, which did not show any correlation with food intake. Notably, there were no additional gastrointestinal complaints, including abdominal pain, vomiting, or other related symptoms. There were no notable characteristics in the patient's family history. She had a history of choledochal cyst diagnosed at age 6.



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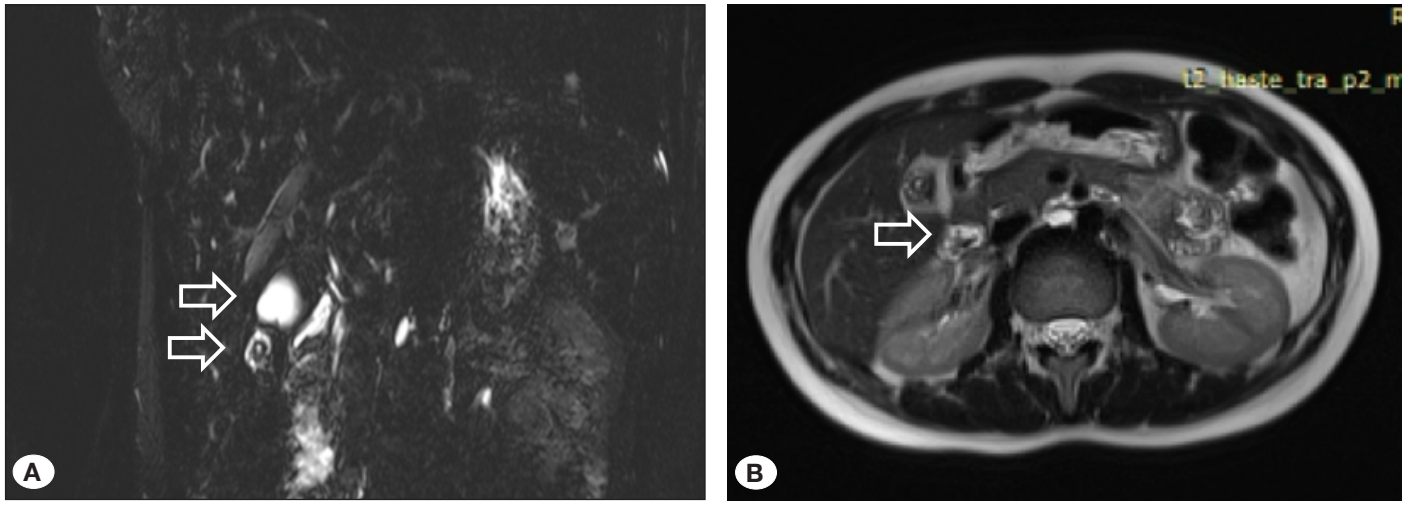


**Figure 1:** T2-weighted coronal view (A), first arrow indicates the gallbladder, second arrow indicates adenomyomatosis; T2-weighted axial view (B) indicates adenomyomatosis with an arrow.

The physical examination revealed a body weight of 58.5 kg (50-75 percentile) and a height of 164.5 cm (50-75 percentile). The physical examination revealed no remarkable findings: the abdomen was soft and non-tender, with no evidence of hepatomegaly or splenomegaly. Murphy's sign was negative, and there were no stigmata of jaundice. Laboratory investigations including complete blood count, liver function tests, and lipid profile were within normal limits.

Radiological studies to determine the etiology revealed a 43x24 mm cyst in the common bile duct and small echogenic foci in the gallbladder lumen on a complete abdominal ultrasound. Ursodeoxycholic acid was initiated at 20 mg/kg/day. Magnetic resonance cholangiopancreatography (MRCP) was requested to confirm the diagnosis of a choledochal cyst. The MRCP examination revealed multiple sequential cystic structures in the gallbladder corpus's caudal part, suggesting adenomyomatosis (Figure 1). No other pathological findings were noted. Due to the patient's symptoms, consultations with pediatric surgery resulted in a surgical plan. The patient's family did not consent. The patient was placed under observation.

## DISCUSSION

Adenomyomatosis is characterized by mucosal epithelial invagination into the thickened muscular layer of the gallbladder (6). The presenting symptoms include abdominal pain, nausea, vomiting, and/or fever. Asymptomatic cases are incidentally diagnosed by ultrasonography during follow-up for other congenital diseases (1). Our patient primarily complained of nausea and did not report experiencing abdominal pain.

In the literature, laboratory findings are within normal limits, except for two patients with a prior history of mildly elevated serum gamma-glutamyl transpeptidase or liver enzymes (1). Our patient's liver enzymes were within normal limits.

The disease's initial observable stage is likely caused by increased intra-gallbladder pressure, which leads to smooth muscle hypertrophy due to abnormal contractions or excessive bile absorption, as well as hyperproliferation of epithelial cells in the gallbladder mucosa. This excessive proliferation causes the epithelial invagination into the muscle layer of the gallbladder, forming intramural diverticula referred to as Rokitansky-Aschoff sinuses. These diverticula may become filled with bile, bile sludge, and gallstones (7). Three forms of this disorder can be distinguished based on their morphology: diffuse, localized (typically a single nodule projecting into the lumen at the fundus, referred to as "adenomyoma" due to its polyp-like appearance on ultrasound), and segmental (a ring-like type with an "hourglass" configuration because of a transverse congenital septum in the gallbladder body) (4).

Adenomyomatosis, cancer, xanthogranulomatous cholecystitis, metastases, chronic cholecystitis, polyps, and sludge should all be taken into account when making a differential diagnosis of localized gallbladder wall thickening (5).

There might be a link between lesion's diameter and the likelihood of developing cancer; therefore, determining the diameter is important. Gallstones smaller than 5 mm typically do not create acoustic shadowing during ultrasound examinations. This situation can complicate the differentiation of polypoid lesions from gallstones when gallbladder sludge is present, and in such cases, a repeat ultrasound is recommended (8). In our patient, a cyst measuring 43x24 mm was noted in the common bile duct. When used in conjunction with MRCP, magnetic resonance imaging is a useful technique for assessing gallbladder lesions (7). During our examination of the patient using MRCP, we discovered that there were no a cyst present in the common bile duct. This finding underscores the importance of performing MRCP in similar cases.

There is limited data on the current management of gallbladder adenomyomatosis in children. While surgery is clearly indicated

for symptomatic patients, the treatment of asymptomatic children remains a matter of controversy. For asymptomatic patients, monitoring with ultrasound at six-month intervals is recommended. Elective laparoscopic cholecystectomy is the suggested treatment for both adults and children, based on evidence from symptomatic patients. Additionally, preoperative MRCP assessment of the extrahepatic biliary tree anatomy is advised for these patients (4).

## CONCLUSION

Cholecystectomy is the treatment of choice for patients with symptomatic adenomyomatosis, and preoperative imaging modalities, including US, CT, and MRI, are crucial for precise anatomical assessment. Furthermore, it is recommended that surgeons actively participate in the close follow-up of asymptomatic patients. Our experience with this particular patient highlights the need to evaluate the anatomy of the extrahepatic biliary tree with MRCP in cases where cysts are diagnosed by ultrasound examination.

The case presentation provides limited data due to involving only one patient who declined surgery. However, it demonstrates the importance of repeated imaging in patients presenting with nausea.

### Contribution of the authors

Study conception and design: MT, CFO, NB,; data collection: MT, CFO, YO, YME, FC, NB; analysis and interpretation of results: MT, CFO, YO, YME, FC, NB; draft manuscript preparation: MT, CFO, YO, YME, FC, NB. All authors reviewed the results and approved the final version of the article.

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### Conflict of interest

The authors declare that there is no conflict of interest.

## REFERENCES

1. Kinoshita H, Ariga H, Shirota J, Sasaki K, Shibukawa Y, et al. Combined fundal and segmental adenomyomatosis of the gallbladder in a child: a rare case report. Case Rep Pediatr. 2019; 2019: 2659089. https://doi.org/10.1155/2019/2659089
2. Pham HD, Ngo MX, Dang TH. Diffuse gallbladder adenomyomatosis in a child. Cureus. 2021; 13(6): e15555. https://doi.org/10.7759/cureus.15555
3. Drakonaki E, Kokkinakis S, Karageorgiou I, Maliotis N, Ioannidoy A, Symvoulakis EK. A case of incidental infantile gallbladder adenomyomatosis: an unusual US finding of uncertain clinical significance. J Ultrason. 2020;20(83): e318-e321. https://doi.org/10.15557/JoU.2020.0055
4. Parolini F, Indolfi G, Magne MG, Salemme M, Cheli M, Boroni G, et al. Adenomyomatosis of the gallbladder in childhood: a systematic review of the literature and an additional case report. World J Clin Pediatr. 2016;5(2):223-7. https://doi.org/10.5409/wjcp.v5.i2.223
5. Dilek ON, Karasu S, Dilek FH. Diagnosis and treatment of gallbladder polyps: current perspectives. Euroasian J Hepatogastroenterol. 2019;9(1):40-8. https://doi.org/10.5005/jp-journals-10018-1294
6. Golse N, Lewin M, Rode A, Sebagh M, Mabrut JY. Gallbladder adenomyomatosis: diagnosis and management. J Visc Surg 2017; 154: 345-353. https://doi.org/10.1016/j.jviscsurg.2017.06.004
7. Ferzeliyev O, Oğuz B, Soyer T, Boybey Türer Ö, Haliloglu M, Tanyel FC. Clinical features and outcomes of gallbladder polyps in children. Turk J Gastroenterol. 2022;33(9):803 7. https://doi.org/10.5152/tjg.2022.21944
8. Pellino G, Sciaudone G, Candilio G, Perna G, Santoriello A, Canonico S, et al. Stepwise approach and surgery for gallbladder adenomyomatosis: a mini-review. Hepatobiliary Pancreat Dis Int. 2013; 12: 136-142. https://doi.org/10.1016/S1499-3872(13)60022-3