

Case report

A large inflammatory polyp of the gallbladder masquerading as gallbladder carcinoma

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Abstract: An inflammatory polyp of the gallbladder is a rare variant of benign gallbladder polyp. Differentiation between an inflammatory polyp and polypoid gallbladder carcinoma is difficult when the polyp is more than 1 cm in diameter. We report a rare case of a large inflammatory polyp of the gallbladder masquerading as gallbladder carcinoma in a 37-year-old Japanese woman who was incidentally diagnosed with a large gallbladder polyp, measuring 1 cm in diameter, by ultrasonography. She was asymptomatic and physical examination was unremarkable. Abdominal ultrasonography and endoscopic ultrasonography revealed three polypoid lesions in the gallbladder. One lesion was an isoechoic polyp, measuring 15 × 8 mm, showing a nodular surface and located in the fundus of the gallbladder. The other two lesions were hyperechoic polyps, measuring 5 × 5 mm, in the body of the gallbladder. Computed tomography and magnetic resonance imaging revealed marked enhancement of the largest polypoid lesion by dynamic study, and no lymph node enlargement was noted. Endoscopic retrograde cholangiography revealed a 12 × 8 mm polyp with an irregular surface in the fundus of the gallbladder. Superselective angiography of the cystic artery revealed neovascularity and a tumor stain in the fundus of the gallbladder. Cholecystectomy with lymph node dissection was performed. Intraoperative frozen section diagnosis of the largest polyp was an inflammatory polyp of the gallbladder. The other two polyps were cholesterol polyps. Inflammatory polyp should be considered as a differential diagnosis of hypervascular gallbladder polyps that measure more than 1 cm in diameter.

Key words: gallbladder polyp, inflammatory polyp, gallbladder carcinoma

Introduction

With the recent progress in diagnostic modalities, including ultrasonography, a large number of gallbladder polyps have been detected.^{1–15} Differentiation of benign and malignant gallbladder polyps is crucial but sometimes difficult.^{1–5} Previous reports have noted that a solitary polyp, measuring more than 1 cm in diameter, with a broad base in an elderly patient is highly suggestive of malignancy and that such lesions should be surgically resected. Inflammatory polyps of the gallbladder are rare, the incidence being about 2.0% of all benign polypoid lesions of the gallbladder.^{2,3} Histopathologically, the polyps consist of edematous stroma containing inflammatory infiltrates, and the polyps are lined by hyperplastic epithelium. Therefore, surgery is not indicated for inflammatory polyps. Although the polyps are usually multiple and as small as 5 mm in diameter, preoperative differential diagnosis of the two types of lesions is difficult if the inflammatory polyp is solitary and more than 1 cm in diameter. We report a large inflammatory polyp of the gallbladder masquerading as gallbladder carcinoma and briefly discuss the differential diagnosis of the two entities.

Case report

A 37-year-old Japanese woman consulted a local doctor because of lower abdominal pain, low-grade fever, and diarrhea. Ultrasonography revealed a polypoid lesion, measuring 15 mm, in the gallbladder. The patient was then referred to us for further examination of the gallbladder polyp. She was asymptomatic and had no history of acute cholecystitis. No abnormalities were found on physical examination. Laboratory findings were within normal limits, except for positive serological test for antibody of hepatitis C virus. Abdominal ultrasonography revealed three polypoid lesions in the

gallbladder. One was an isoechoic polyp in the fundus of the gallbladder, measuring 15×8 mm and showing a nodular surface (Fig. 1). The other two were hyperechoic polyps in the body of the gallbladder, measuring 5×5 mm. Endoscopic ultrasonography displayed three polypoid lesions. One was hypoechoic and the other two showed aggregates of echogenic spots, diagnostic of cholesterol polyps. No involvement of the gallbladder wall was evident. Endoscopic retrograde cholangiography revealed a 12×8 mm polyp, with an irregular boundary, in the fundus of the gallbladder (Fig. 2). Computed tomography (Fig. 3) and magnetic resonance imaging revealed a polypoid lesion with marked contrast enhancement (Fig. 4), but no lymph node enlargement. Superselective angiography of the cystic artery revealed neovascularity and a tumor stain in the fundus of the gallbladder (Fig. 5). Laparotomy was done, with the tentative diagnosis being polypoid gallbladder carcinoma.

On the opening of the abdomen, a polyp was palpated in the fundus of the gallbladder. The serosal surface was smooth. Intraoperative ultrasonography showed no invasion to the liver bed. Cholecystectomy with lymph node dissection was performed. There were three polyps in the gallbladder. The largest polyp, in the fundus of the gallbladder, was pedunculated and measured 15×8 mm (Fig. 6). The stroma consisted of edematous tissue containing inflammatory infiltrates, and the polyp

was lined by hyperplastic epithelium (Fig. 7a,b). Intraoperative frozen section diagnosis was inflammatory polyp of the gallbladder. The final histopathological diagnosis of the other two polyps was



Fig. 1. Abdominal ultrasonography shows an isoechoic polyp, measuring 15×8 mm, in the fundus of the gallbladder

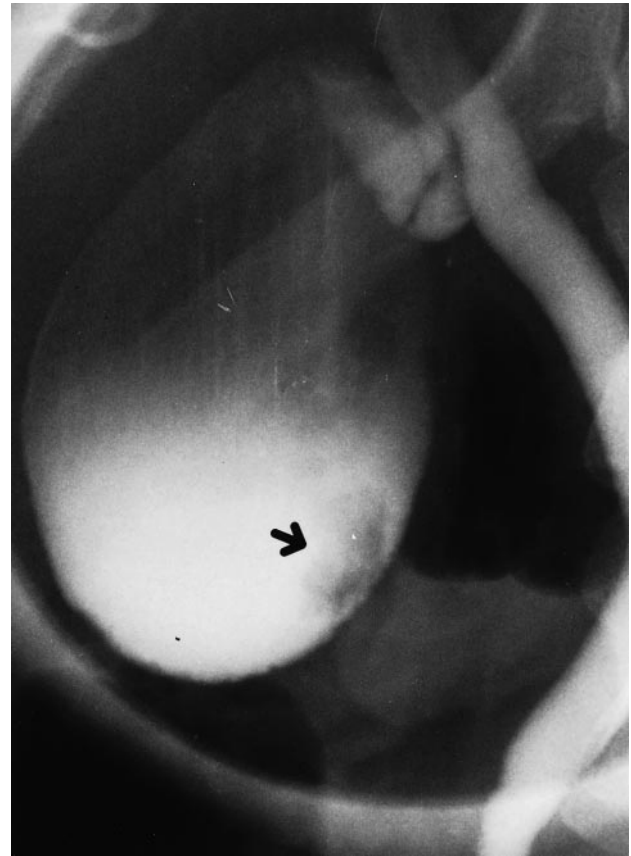


Fig. 2. Endoscopic retrograde cholangiography shows a filling defect in the gallbladder (arrow)

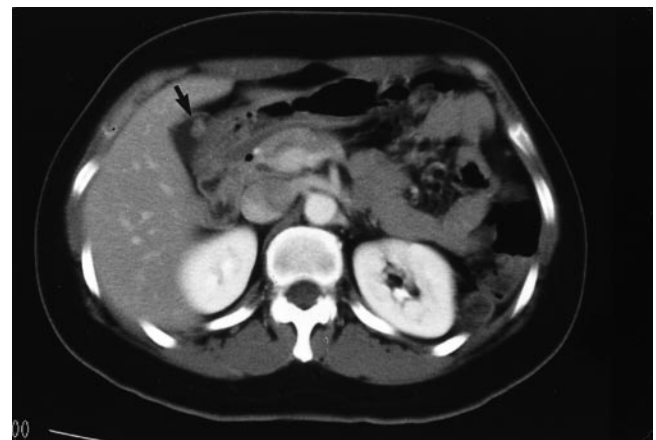


Fig. 3. Computed tomography shows enhancement of gallbladder polyp (arrow)

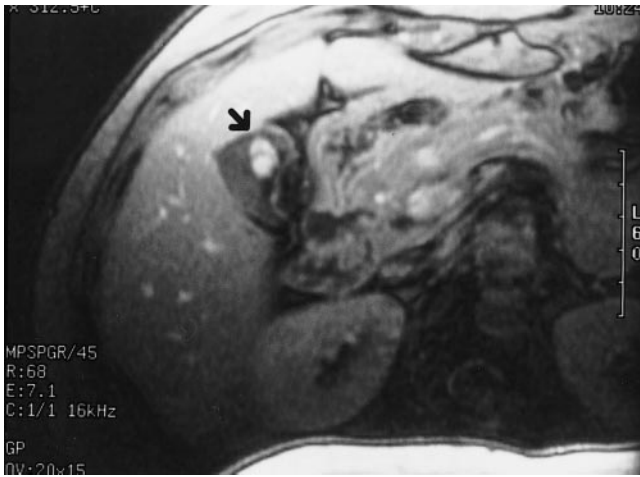


Fig. 4. Dynamic magnetic resonance imaging study demonstrates a gallbladder polyp enhanced in the delayed phase (*arrow*)

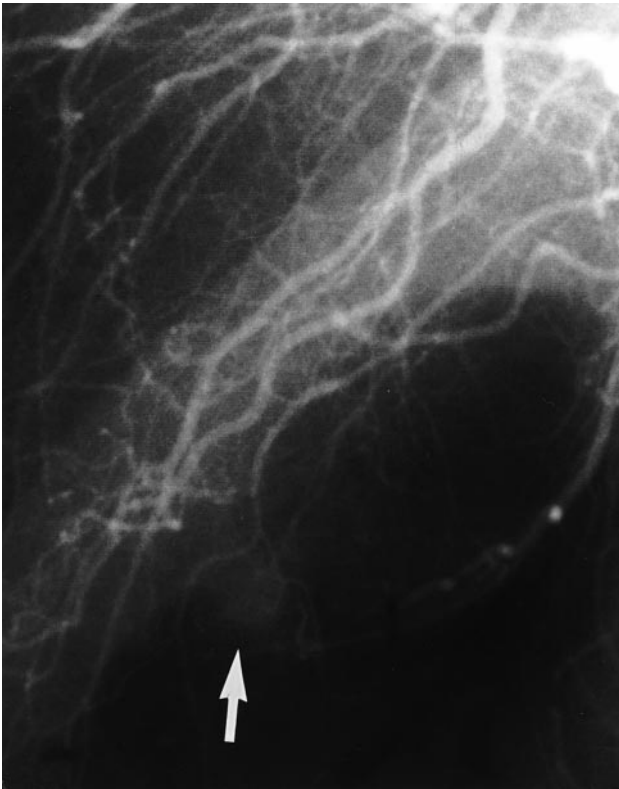


Fig. 5. Angiography shows a hypervascular polyp in the gallbladder (*arrow*)

cholesterol type. The patient's postoperative course was uneventful and she was discharged on the 15th postoperative day. During a 2-year follow-up, she has been doing well.

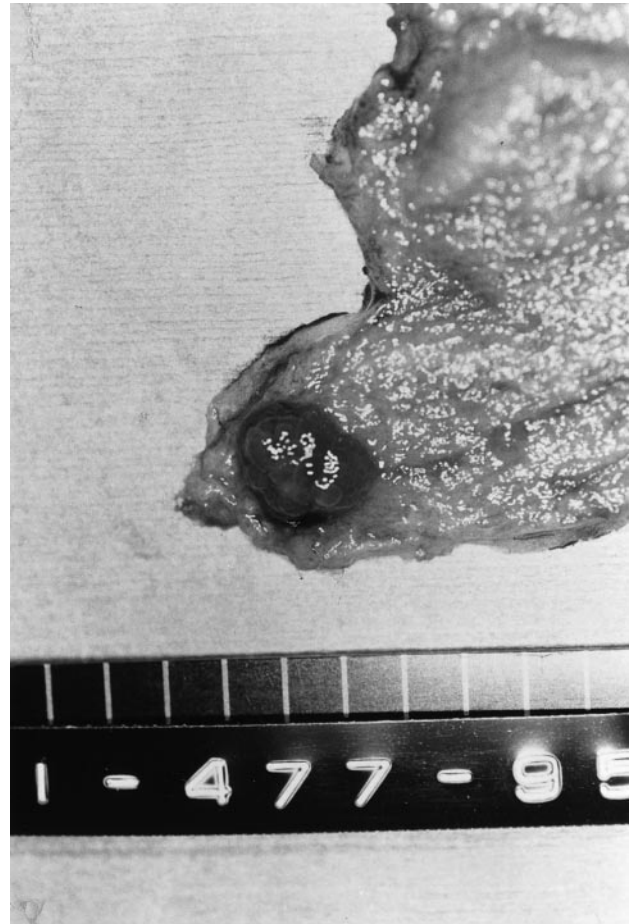


Fig. 6. Photograph of the resected gallbladder showing the polyp, which is more than 1 cm in diameter, in the fundus

Discussion

An inflammatory polyp in the gallbladder is rare, the incidence being 1.7%–4.6% of all benign polypoid lesions of the gallbladder.^{3,5} Inflammatory polyps are usually multiple and as small as 5 mm in diameter. They are considered to be a lesion reactive to gallstones or chronic inflammation, and, therefore, are frequently found in patients with cholelithiasis.⁴ Kyokane et al.² suggested that inflammatory polyps may be formed by long-term stimulation of cholesterol which is deposited in the gallbladder wall. In the present patient, two cholesterol polyps were also found, and the inflammatory polyp contained focal aggregates of foamy histiocytes. These findings would support the hypothesis of Kyokane et al.² Histologically, inflammatory polyps consist of vascular connective tissue containing chronic inflammatory infiltrates, and the polyps are lined by hyperplastic epithelium.³ There is no evidence to suggest that the polyps have any greater potential for malignant change than the adjacent mucosa of the gallbladder.^{11,13}

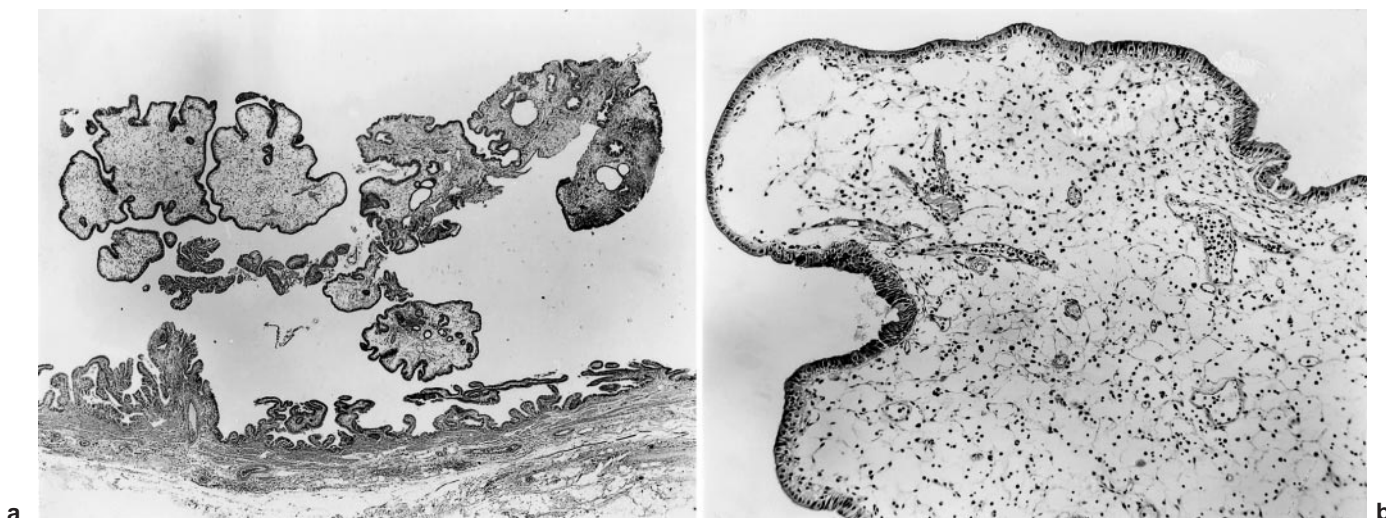


Fig. 7a,b. Microphotographs of polyp in the gallbladder. **a** The polyp is lobulated and has a short stalk. **b** The stroma consists of edematous tissue with inflammatory infiltrates, and

the polyp is lined by hyperplastic epithelium. **a** H&E, $\times 11$; **b** H&E, $\times 74$

Many authors have described indicators to differentiate benign and malignant polypoid lesions of the gallbladder prior to surgery. Chijiwa and Tanaka¹ reported that there should be a high index of suspicion of carcinoma when the polypoid lesion exceeds 10 mm in size, the lesion is solitary, and the patient's age is more than 60 years. In retrospect, the size of the polyp (15 mm) in the present patient was highly suggestive of malignancy; however, her age (37 years) and the number of lesions (three) were not the risk factors for malignancy mentioned above.

With regard to imaging findings of inflammatory polyps in the gallbladder, very few reports have described characteristic findings, probably because of the rarity of the disease.⁶ Kyokane et al.² reported that ultrasonography of the inflammatory polyps showed a hyperechoic line around these lesions. In the present patient, however, such a specific finding was not obtained by ultrasonography. Recently, computed tomography has also been used to differentiate neoplastic lesions of the gallbladder from benign lesions.⁷ Furukawa et al.⁷ demonstrated that small polypoid lesions of the gallbladder were invariably detected by enhanced computed tomography, but cholesterol polyps and hyperplastic polyps were not always detected by plain computed tomography. In our patient, marked enhancement of the polyp by enhanced computed tomography, magnetic resonance imaging, and angiography seemed characteristic. However, hypervascularity by angiography is compatible with both inflammatory polyp and adenocarcinoma.² At present, precise differential diagnosis of the two lesions is very difficult in gallbladder polyps more than 1 cm

in diameter. Newly developed sonography with intraarterial infusion of carbon dioxide microbubbles (sonographic angiography) or a color Doppler method in ultrasonography may be useful for differentiation.

The treatment of polypoid lesions of the gallbladder remains controversial. Kubota et al.¹⁴ recommended that a polypoid lesion of the gallbladder less than 18 mm in diameter should be resected by laparoscopic cholecystectomy with full-thickness dissection as excisional biopsy, based on findings in their series that all the advanced cancers in the gallbladder were more than 18 mm in diameter. Yamaguchi et al.¹⁵ reviewed 2616 laparoscopic cholecystectomies, including 24 gallbladder carcinomas, and concluded that gallbladder carcinoma confined to the muscle coat removed laparoscopically needed no additional surgery such as hepatic resection. In our department, gallbladder polyps that are preoperatively suggestive of malignancy are treated under open laparotomy. The operative procedure is decided according to intraoperative macroscopic findings, intraoperative ultrasonography, and the depth of invasion defined by intraoperative frozen section diagnosis of the resected gallbladder. In the present patient, we selected open cholecystectomy according to our policy noted above, because we could not completely rule out advanced gallbladder cancer prior to surgery.

In this communication, we have reported a rare case of large inflammatory polyp of the gallbladder masquerading as gallbladder carcinoma. Inflammatory polyps should be considered as a differential diagnosis of hypervascular gallbladder polyp, even when they measure more than 1 cm in diameter.

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