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Surgical Intervention vs Observation in the Management of Gallbladder Polyps: A Case Series

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ABSTRACT

Gallbladder polyps have an incidence of approximately 5-7% in the adult population and are more prevalent in men. There are different types of polyps, the majority of which are benign cholesterol polyps; and other types include inflammatory, adenomatous, adenomyomatous, and malignant. In this article, we are analyzing results from 3 case reports where the diagnosis of gallbladder polyps was made. Routine ultrasound examinations were performed to check for changes in the characteristics of the polyps. Two patients had benign cholesterol polyps and one patient had an adenocarcinoma. Polyps present with very similar features to gallbladder stones; hence need to be carefully evaluated. The gold standard imaging tool to diagnose gallbladder polyps is abdominal ultrasound, which displays a protrusion without any acoustic shadowing. Sometimes polyps can be hidden behind the acoustic shadowing of gallstones when visualized on ultrasound if existing together. Risk factors and signs of malignancy influence decision-making of whether the intervention should be cholecystectomy or observation, and hence should be considered.

Keywords: Cholecystectomy; Cholesterol polyp; Gallbladder polyp; Malignant polyp.

BACKGROUND

About 5-7% of the adult population have gallbladder polyps with incidence more common in men. The majority of polyps are found as incidental findings during transabdominal ultrasound conducted for other gastrointestinal conditions or during routine health checkups. These polypoid lesions of the gallbladder can present a wide spectrum of findings.[1,2]

Gallbladder polyps can be classified as benign or malignant. The majority of gallbladder polyps are benign pseudotumors - mostly cholesterol polyps. Only 5% of these polyps have malignant transformations and are problematic due to their poor prognosis. Hence, careful early detection and appropriate treatment are recommended as precancerous or early cancerous gallbladder polyps have a higher rate of cure along with an 80% five-year survival rate prognosis.[1,3,4]

Based on the literature review several types of gallbladder polyps are described:[3-5]

- Cholesterol polyps – the most common benign form of polyps. They are mainly deposits of cholesterol caused by a condition called cholesterols;
- Inflammatory polyps –these are benign relationships with chronic inflammation caused by repeated episodes of cholecystitis;
- Adenomyomatosis – benign change of the gallbladder wall, however often indicative of being precancerous. The incidence increases with age. It is characterized by the thickening of the wall containing small bile-filled cystic spaces known as the Rokitansky-Aschoff sinuses;
- Adenomatous polyps – true tumor polyps. They are rare but have a high risk of cancer especially if size and age fit the risk factor criteria;
- Malignant polyps – rare adenocarcinomas that are most often larger than 10 mm and are solitary.

CASE

In the study, we are reporting 3 cases of gallbladder polyps, after obtaining written consent from all 35-, 38-, and 58-years old female patients. The first 2 patients didn't have any clinical complaints, however, the third patient had mild periodic pain in the right subcostal region. Upon prophylactic imaging of the abdomen using ultrasound- a small protrusion without acoustic shadowing was seen in her gallbladder that confirmed gallbladder polyps. The decision was made to keep these patients on observation. The following are the case summaries:

- The first 35-year-old patient was under observation for three years. She had 5 polyps with a maximal size of 6 mm visible by ultrasound (during the first year of observation). In these 3 years, ultrasounds were performed routinely 6 times to check for any progression. During the observation time, the polyp's maximal size increased from 6 to 11 mm. The significant growth in size became an indication for operative treatment; (Fig.1)

- The second patient, a 38-year-old female had multiple polyps with 8 mm of maximal size and chronic acalculous cholecystitis. Operative treatment was decided because of its combination with inflammation; (Fig.2)
- The third patient, a 58-year-old female, had one 2 cm polyp in the gallbladder. The operation was offered, but she denied surgical intervention and hence was kept on observation. She was admitted again just 2 years after her first diagnosis. Polyp size was 4 cm on ultrasound. Hence, she agreed to proceed with the surgery. (Fig.3)

FIGURE 1. Cholesterol-type polyp in the gallbladder of patient number 1

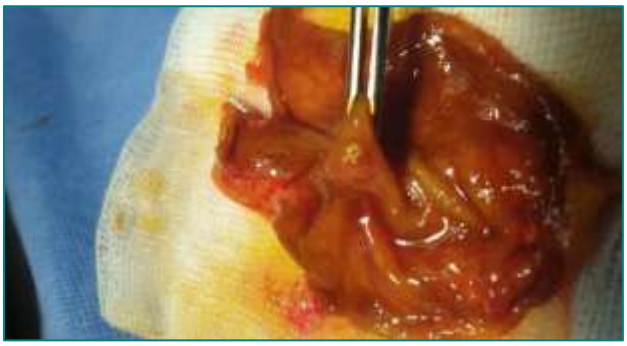


FIGURE 2. Cholesterol-type polyp in the gallbladder of patient number 2

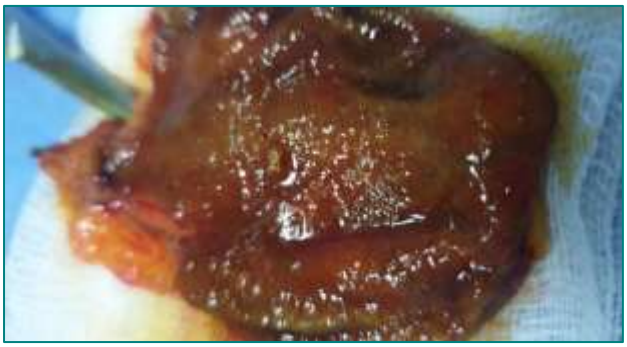
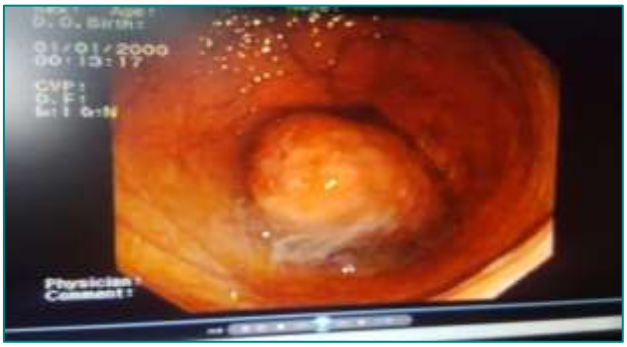


FIGURE 3. Adenocarcinoma of the gallbladder polyp of patient number 3



DISCUSSION

In our cases, we had two cholesterol and one malignant polyp (diagnosed after the operation). A variety of factors are considered and are currently used in the assessment and differentiation of benign polyps from malignant polyps. These include the patient's age, polyp size, number of polyps, growth over time, morpho-pathology, family history, cholesterols, etc.[1-3,6]

Cancerous growth is associated in patients with age more than 50 years, singular polyps, size more than 10 mm on ultrasound, rapid growth in size, and sessile pattern.[3,4,6,12.] Cases have been reported that patients with preexisting primary sclerosing cholangitis have been diagnosed with malignant gallbladder polyp; making the condition another independent risk factor.[3,7]

Other minor risk factors are patients with preexisting chronic cholelithiasis or biliary sludge. These patients need to be further evaluated carefully as the presence of acoustic shadowing from the gallstones during an ultrasound can mask the polyp. Other known pathologies contributing to risk factors are congenital polyposis syndromes, such as Peutz-Jeghers syndrome, Gardner syndrome, and Familial adenomatous polyposis.[3,4] A Chinese retrospective study also found chronic hepatitis B as a risk factor.[3,5]

The majority of the cases are asymptomatic. However, symptomatic patients can present with nausea, vomiting, indigestion, and occasional right upper quadrant pain. The pain can mimic biliary colic but, in this case, it is due to small pieces of detached cholesterol obstructing the neck of the gallbladder. A few reports have presented acalculous cholecystitis and hemobilia.[3,5] The range and severity of symptoms are proportional to the size of the polyp as the larger the polyps, the more they tend to block the flow and cause a higher degree of inflammation.

Ultrasound is the best initial test to diagnose gallbladder polyp as it has good sensitivity, and specificity is easily accessible and has cheaper costs in comparison to other imaging methods. Usually, gallbladder polyps will appear as fixed hyperechoic projecting masses without acoustic shadow; in contrast to gallstones which show acoustic shadow. Cons are that ultrasound cannot distinguish benign from malignant polyps and polyps smaller than 5 mm are not easily caught on imaging.[3,8,9]

Inconclusive ultrasound findings need further testing. Follow-up tests can be done with endoscopic ultrasonography (EUS), CT and PET scans. EUS uses higher ultrasound frequencies and provides a better detailed visual.

A study reported EUS and CT to have an accuracy of 91% in distinguishing benign and malignant polyps on imaging and can be used in patients with risk factors.[3,10]

The surgical treatment of choice is laparoscopic cholecystectomy for benign cases. Open cholecystectomy is the preferred surgical option if the surgeon has imaging evidence of malignant polyps, if the likelihood of gallbladder

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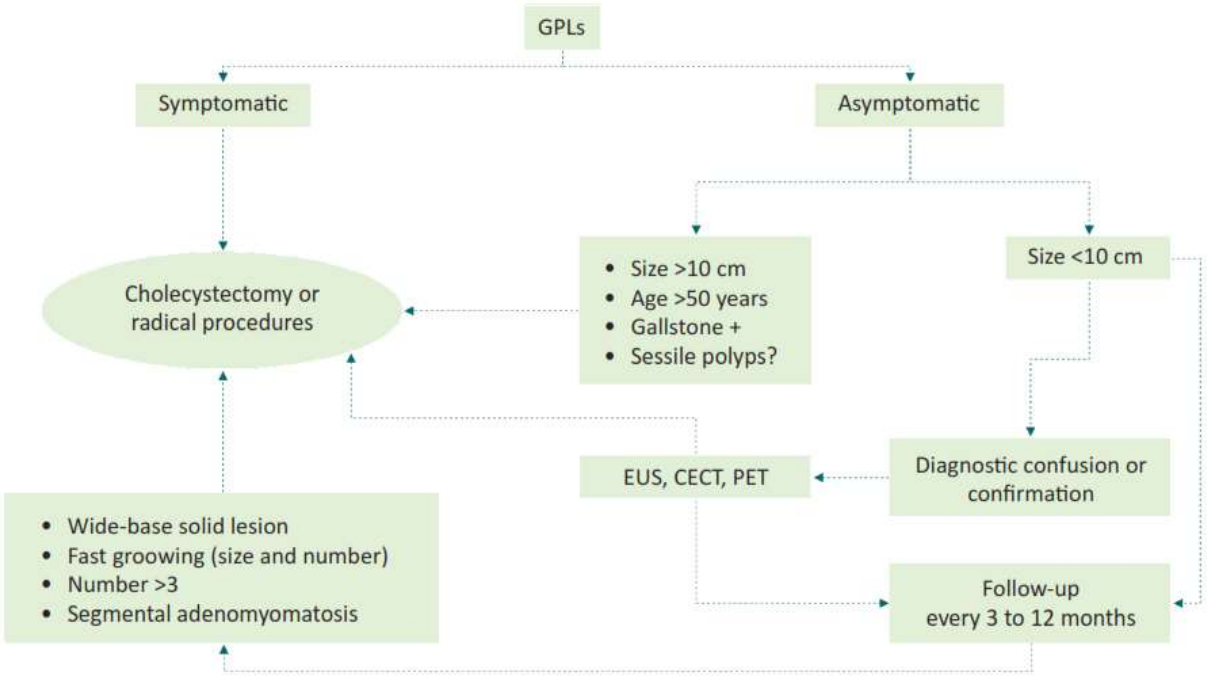
perforation is high, or if unsure whether imaging is enough to rule out benign polyps.[3,11,12] Open surgery method also provides improved visibility, and easier access to check for regional liver or abdominal metastatic spread, perform lymph node dissection, and prevent intra-abdominal neoplasm diffusion.

The treatment plan (Fig.4) depends on various factors, including patient symptoms, associated conditions, risk factors, and the patient's choice:[2-4,15]

- Asymptomatic and non-risk patients with polyps that are smaller than 10 mm can be kept on routine abdominal ultrasound or EUS monitoring every 6-12 months for at least 5 years, to check for any sudden growth. Any evidence of further rapid growth of more than 2 mm in size or symptoms needs surgery. Although any patient with a polyp size of more than 6 mm should strongly be advised to consider cholecystectomy for the prevention of complications;
- Symptomatic polyp patients should undergo surgery after appropriate clearance by their surgeon;
- Patients with any of the risk factors mentioned above should have surgery;
- Polyp in patients with primary sclerosing cholangitis or cholecystitis, irrespective of the size, should be referred for operation.

FIGURE 4. Proposed management flowchart for gallbladder polyps. Dilek et al.2019[4]



EUS: endoscopic ultrasonography; CECT: contrast enhanced computed tomography; PET: positron emission tomography.

CONCLUSIONS

There are both pros and cons when referring to which form of intervention along with the appropriate management plan should be implemented for gallbladder polyp patients. Major cons about a long-term follow-up approach are that:

Not cost-efficient- as this includes serial ultrasound examinations and multiple surgeon consultations. This may also deem uncomfortable for patients in the long run;

Constant follow-up consults can increase the workload on the surgeon and hospital staff;

Increase of the anticipating fear & anxiety in the patient and their families due to the constant worry and concern for their health and the possibilities of malignant progression.

However, follow-ups alone can avoid the patient from undergoing surgeries. The surgical approach towards gallbladder polyps can also be expensive as pre-op, and post-op care and the surgery itself has a high price. Another con is that surgery itself comes with a list of risks.

The good news though is that this surgery would be a one-time investment and is a low-risk surgery. Also, this cure has no chance of recurrence.

Based on the review of the literature and our minimal experience we agree to exist opinions, that surgical treatment is indicated if:

a) polyps of any size are accompanied by inflammation and/or stones, or

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b) follow-up of any polyps less the 9 cm revealed a significant increase in polyp size or

c) polyp's size is greater than 10cm.

A surgical approach especially for patients with known high-risk factors of malignancy development can be a one-time cure for the pathology and should be strongly advised.

We believe further study needs to be of focus to obtain a universal guideline for the management of gallbladder polyps using surgery as a method when compared to follow-ups.

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N/A

REFERENCES

1. Myers RP, Shaffer EA, Beck PL. Gallbladder polyps: epidemiology, natural history and management. Can J Gastroenterol. 2002;16(3):187-194. doi:10.1155/2002/787598
2. Matos AS, Baptista HN, Pinheiro C, Martinho F. Gallbladder polyps: how should they be treated and when? *Rev Assoc Med Bras (1992)*. 2010;56(3):318-321. doi:10.1590/s0104-42302010000300017
3. Andrén-Sandberg A. Diagnosis and management of gallbladder polyps. N Am J Med Sci. 2012;4(5):203-211. doi:10.4103/1947-2714.95897
4. Dilek ON, Karasu S, Dilek FH. Diagnosis and Treatment of Gallbladder Polyps: Current Perspectives. Euroasian J Hepatol Gastroenterol. 2019;9(1):40-48. doi:10.5005/jp-journals-10018-1294
5. Gallahan WC, Conway JD. Diagnosis and management of gallbladder polyps. Gastroenterol Clin North Am. 2010;39(2):359-x. doi:10.1016/j.gtc.2010.02.001
6. Park JK, Yoon YB, Kim YT, et al. Management strategies for gallbladder polyps: is it possible to predict malignant gallbladder polyps? Gut Liver. 2008;2(2):88-94. doi:10.5009/gnl.2008.2.2.88
7. Leung UC, Wong PY, Roberts RH, Koea JB. Gall bladder polyps in sclerosing cholangitis: does the 1-cm rule apply? ANZ J Surg. 2007;77(5):355-357. doi:10.1111/j.1445-2197.2007.04059.x
8. Choi WB, Lee SK, Kim MH, et al. A new strategy to predict the neoplastic polyps of the gallbladder based on a scoring system using EUS. Gastrointest Endosc. 2000;52(3):372-379. doi:10.1067/mge.2000.108041
9. Sadamoto Y, Oda S, Tanaka M, et al. A useful approach to the differential diagnosis of small polypoid lesions of the gallbladder, utilizing an endoscopic ultrasound scoring system. Endoscopy. 2002;34(12):959-965. doi:10.1055/s-2002-35859
10. Sun XJ, Shi JS, Han Y, Wang JS, Ren H. Diagnosis and treatment of polypoid lesions of the gallbladder: report of 194 cases. Hepatobiliary Pancreat Dis Int. 2004;3(4):591-594
11. Persley KM. Gallbladder Polyps. Curr Treat Options Gastroenterol. 2005;8(2):105-108. doi:10.1007/s11938-005-0002-3
12. Pejić MA, Milić DJ. Hirurski tretman polipoidnih lezija zucne kese [Surgical treatment of polypoid lesions of gallbladder]. Srp Arh Celok Lek. 2003;131(7-8):319-324. doi:10.2298/sarh0308319p
13. Kratzer W, Haenle MM, Voegtle A, et al. Ultrasonographically detected gallbladder polyps: a reason for concern? A seven-year follow-up study. BMC Gastroenterol. 2008;8:41. Published 2008 Sep 15. doi:10.1186/1471-230X-8-41.
14. Park JY, Hong SP, Kim YJ, et al. Long-term follow up of gallbladder polyps. J Gastroenterol Hepatol. 2009;24(2):219-222. doi:10.1111/j.1440-1746.2008.05689.x
15. Valibouze C, El Amrani M, Truant S, et al. The management of gallbladder polyps. J Visc Surg. 2020;157(5):410-417. doi:10.1016/j.jviscsurg.2020.04.008

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