

Carcinoma *in situ* in a 7 mm gallbladder polyp: Time to change current practice?

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Abstract

Detection of polypoid lesions of the gallbladder is increasing in conjunction with better imaging modalities. Accepted management of these lesions depends on their size and symptomatology. Polyps that are symptomatic and/or greater than 10 mm are generally removed, while smaller, asymptomatic polyps simply monitored. Here, a case of carcinoma-*in-situ* is presented in a 7 mm gallbladder polyp. A 25-year-old woman, who had undergone a routine cholecystectomy, was found to have an incidental 7 mm polyp containing carcinoma *in situ*. She had few to no risk factors to alert to her condition. There are few reported cases of cancer transformation in gallbladder polyps smaller than 10 mm reported in the literature. The overwhelming consensus, barring significant risk factors for cancer being present, is that such lesions should be monitored until they become symptomatic or develop signs suspicious for malignancy. In our patient's case this could have led to the possibility of missing a neoplastic lesion, which could then have gone on to develop invasive cancer. As gallbladder carcinoma is an aggressive cancer, this may have led to a tragic outcome.

Key words: Gallbladder; Polyp; Cholecystectomy; Size; Carcinoma

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Core tip: Current guidelines for management of gallbladder polyps recommend cholecystectomy for

polyps with size > 10 mm and/or presence of symptoms. Considering some cases of carcinoma in polyps with size less than 10 mm have been seen, consideration of a cholecystectomy for smaller size polyps is warranted.

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INTRODUCTION

Detection of polypoid lesions of the gallbladder (PLG) has become increasingly more frequent over the last thirty years primarily due to an increase in the use of ultrasound and other imaging modalities in evaluation of patients with abdominal complaints. In the adult population, 0.03%-9.5% of people are estimated to have PLG^[1]. Due to the malignant potential of these lesions their management has been well documented^[2,3].

In current practice, symptomatic lesions or polyps greater than 10 mm warrant cholecystectomies, while asymptomatic polyps less than 10 mm are followed with routine ultrasound every 3-6 mo for one to two years^[3]. Here, we present a case of a 25-year-old woman who presented with a 7 mm PLG which was found, after cholecystectomy, to contain carcinoma-*in-situ*. Our goal is to add to existing literature of PLG and to caution physicians that delaying polyp removal simply due to lack of a lesion's symptoms or significant size may be harmful.

CASE REPORT

A 25-year-old female presented to the emergency room with right upper quadrant abdominal pain for duration of 2 d. On physical examination she had mild tenderness in right upper quadrant. Laboratory work up revealed: WBC 7500/mL, ALT 148, AST 254, ALP 119, Total Bilirubin 0.5 and direct bilirubin 0.3. Ultrasound examination showed multiple gallstones and a common bile duct (CBD) of 12 mm. She underwent an endoscopic retrograde cholangiopancreatography at which time her CBD was cleared of stones, and subsequently a laparoscopic cholecystectomy was performed. The postoperative period was uneventful and the patient was discharged home.

The final pathology report revealed acute and chronic cholecystitis with multiple small gallstones. An incidental 7 mm pedunculated tubular adenoma was seen in the fundus of the gallbladder, with a segment of carcinoma *in situ*.

The patient was informed, and an appointment for oncology was arranged, but the patient chose not to go.

Current guidelines do not recommend further treatment for T1a tumors, and certainly not for Tis disease^[4,5]. Even aggressive surveillance is not recommended according to the National Comprehensive Cancer Network^[6]. The patient next presented to our hospital system for an unrelated problem three years later, and was showing no signs of disease.

DISCUSSION

Approximately 4% of the adult population is estimated to have gallbladder polyps, the majority of which are benign cholesterol lesions^[1,2]. Adenomas comprise the second most common PLG, 3% to 8% of which are reported to have malignant potential^[1,2]. There is no correlation between symptomatology and the probability of a malignant lesion. As such, there is no reliable way of differentiating a benign polyp from a malignant one outside of pathologic examination of the polyp^[1,3].

The consensus regarding resecting a patient's gallbladder or leaving it in place has been widely documented. A search including PubMed, Embase, and Web of Science was done to locate relevant literature on the subject. Keywords included gallbladder, polyps, carcinoma or neoplasms, and gallbladder neoplasms were used.

Boulton *et al*^[7] published the basic algorithm utilized today which differentiates lesions primarily based on size and symptoms but also included "complicating factors," or risks, in ultimately making a decision^[8]. These risk factors include age greater than 50 and the presence of gallstones. Cha *et al*^[9] include diabetes mellitus as a significant risk, while Myers *et al*^[1] include polyp growth and a solitary lesion among these complicating factors, but state that no "consistent profile" exists among patients. Polyps > 10 mm (or some say > 9 mm) are resected regardless of a person's symptoms or risk factors, as are symptomatic PLG^[7,10]. All asymptomatic lesions < 10 mm in patients with limited/no risk factors are monitored by ultrasound^[7]. The duration of monitoring is inconclusive with some sources quoting every 3-6 mo for 1-2 years, while others state that lesions less than 6 mm do not need monitoring at all^[3,7,10,11].

A number of studies have been done in an attempt to ascertain the appropriate size that gallbladder polyps should be removed due to their risk of malignant potential. Corwin *et al*^[10] published a study in 2011 describing 346 patients with PLG. Following these patients with cholecystectomy and serial ultrasound, no neoplastic lesions were found in polyps < 6 mm, one neoplastic polyp was noted in polyps 7-9 mm, and two polyps greater than 10 mm were neoplastic^[10]. Their conclusion was that PLG's < 6 mm require no follow up, but regarding lesions > 7 mm no conclusion could be made and further studies were recommended^[10]. Another study published in 2010 by Matos *et al*^[12] followed 93 patients, 91 of whom had benign polyps and two who had malignant ones. Of the two, which were found to be malignant, the average size in diameter was 18.8

mm and they concluded that polyp diameters greater than 10 mm were required to induce surgery, assuming no known risk factors existed^[12]. Several other studies of asymptomatic patients with PLG have been reported in the literature, with case series ranging between 161 and 417 patients. These have all come to the conclusion that 10 mm or greater was the appropriate cutoff in asymptomatic patients with no risk factors to require surgery^[13-15].

In our patient, a 7 mm polyp was incidentally identified after a cholecystectomy performed due to symptomatic gallstones. Upon pathological examination carcinoma *in situ* was discovered within the lesion. In a less fortunate person with a PLG and no symptomatic gallstones, current management would have resulted in missing a precancerous lesion. Considering that gallbladder carcinoma usually presents late, with a five-year survival from 5%-13%^[16], this may have led to a detrimental outcome in our patient. This is a drastic difference in survival outcome compared to gallbladder cancers that are removed early, which has up to a 95% to 99% survival if extracted prior to muscularis and mucosal invasion, respectively^[17].

Our patient demonstrates the care that must be taken regarding the management of polyps even smaller than 10 mm. This is especially true considering the significant benefit of avoiding a serious cancer relative to the small risk of surgical complications. Perhaps we should consider removing gallbladders with asymptomatic PLG that are between 5 mm-10 mm in size even in the absence of known risk factors. While this paper adds to the growing literature on these smaller size polyps, larger studies with more cases are necessary before formal recommendations can be made.

COMMENTS

Case characteristics

A 25-year-old woman presented with right upper quadrant abdominal pain for two days.

Clinical diagnosis

There was mild right upper quadrant tenderness on exam, with no jaundice.

Differential diagnosis

Differential diagnosis included acute cholecystitis or biliary colic, with choledocholithiasis less likely at this point.

Laboratory diagnosis

White blood cell count was normal, with elevation of transaminases, minimal elevation of alkaline phosphatase and normal bilirubin.

Imaging diagnosis

Ultrasound showed gallstones and a significantly dilated common bile duct of 12 mm.

Pathological diagnosis

Acute and chronic cholecystitis with gallstones, and an incidental finding of a 7 mm gallbladder polyp with carcinoma *in situ*.

Treatment

Patient underwent endoscopic retrograde cholangiopancreatography and then laparoscopic cholecystectomy, which is sufficient for her carcinoma *in situ*.

Related reports

Other reports have suggested observation for polypoid lesions of gallbladder less than 10 mm.

Term explanation

Polypoid lesions of the gallbladder refer to lesions seen on imaging that look like a polyp, as opposed to stones which are mobile and layer in the dependent region of the gallbladder.

Experiences and lessons

The important lesson from this case is that malignant degeneration can develop in polyps less than 10 mm in size.

Peer-review

This adds to the literature of polyps less than 10 mm, and can suggest lowering the threshold for recommending cholecystectomy, but more research with larger numbers is necessary.

REFERENCES

- 1 Myers RP, Shaffer EA, Beck PL. Gallbladder polyps: epidemiology, natural history and management. *Can J Gastroenterol* 2002; **16**: 187-194 [PMID: 11930198]
- 2 Tomić DV, Marković AR, Alempijević TM, Davidović DB, Prsić DR, Vucković MS. Ultrasound diagnosis of gallbladder polyps. *Acta Chir Jugosl* 2011; **58**: 31-35 [PMID: 22519188]
- 3 Lee KF, Wong J, Li JC, Lai PB. Polypoid lesions of the gallbladder. *Am J Surg* 2004; **188**: 186-190 [PMID: 15249249 DOI: 10.1016/j.amjsurg.2003.11.043]
- 4 Huelman MT, Vollmer CM, Pawlik TM. Evolving treatment strategies for gallbladder cancer. *Ann Surg Oncol* 2009; **16**: 2101-2115 [PMID: 19495882 DOI: 10.1245/s10434-009-0538-x]
- 5 Rathanaswamy S, Misra S, Kumar V, Chintamani J, Agarwal A, Gupta S. Incidentally detected gallbladder cancer- the controversies and algorithmic approach to management. *Indian J Surg* 2012; **74**: 248-254 [PMID: 23730052 DOI: 10.1007/s12262-012-0592-7]
- 6 National Comprehensive Cancer Network Guidelines Version 2. 2015 Updates. Hepatobiliary Cancers. Available from: URL: http://www.nccn.org/professionals/physician_gls/pdf/hepatobiliary.pdf
- 7 Boulton RA, Adams DH. Gallbladder polyps: when to wait and when to act. *Lancet* 1997; **349**: 817 [PMID: 9121250 DOI: 10.1016/S0140-6736(05)61744-8]
- 8 Sarkut P, Kilicirgay S, Ozer A, Ozturk E, Yilmazlar T. Gallbladder polyps: factors affecting surgical decision. *World J Gastroenterol* 2013; **19**: 4526-4530 [PMID: 23901228 DOI: 10.3748/wjg.v19.i28.4526]
- 9 Cha BH, Hwang JH, Lee SH, Kim JE, Cho JY, Kim H, Kim SY. Pre-operative factors that can predict neoplastic polypoid lesions of the gallbladder. *World J Gastroenterol* 2011; **17**: 2216-2222 [PMID: 21635332]
- 10 Corwin MT, Siewert B, Sheiman RG, Kane RA. Incidentally detected gallbladder polyps: is follow-up necessary?--Long-term clinical and US analysis of 346 patients. *Radiology* 2011; **258**: 277-282 [PMID: 20697115 DOI: 10.1148/radiol.10100273]
- 11 Konstantinidis IT, Bajpai S, Kambadakone AR, Tanabe KK, Berger DL, Zheng H, Sahani DV, Lauwers GY, Fernandez-del Castillo C, Warshaw AL, Ferrone CR. Gallbladder lesions identified on ultrasound. Lessons from the last 10 years. *J Gastrointest Surg* 2012; **16**: 549-553 [PMID: 22108768]
- 12 Matos AS, Baptista HN, Pinheiro C, Martinho F. [Gallbladder polyps: how should they be treated and when?]. *Rev Assoc Med Bras* 1992; **56**: 318-321 [PMID: 20676540]
- 13 Jung SJ, Kim JS, Hong SG, Joo MK, Lee BJ, Kim JH, Yeon JE,

- Park JJ, Byun KS, Bak YT, Kim WB, Choi SY. [Critical reappraisal of cholecystectomy in patients with asymptomatic gallstones for early diagnosis and removal of dysplasia and cancer]. *Korean J Gastroenterol* 2010; **55**: 52-57 [PMID: 20098067]
- 14 **Ito H**, Hann LE, D'Angelica M, Allen P, Fong Y, Dematteo RP, Klimstra DS, Blumgart LH, Jarnagin WR. Polypoid lesions of the gallbladder: diagnosis and followup. *J Am Coll Surg* 2009; **208**: 570-575 [PMID: 19476792]
 - 15 **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**: 591-594 [PMID: 15567752]
 - 16 **Ito H**, Matros E, Brooks DC, Osteen RT, Zinner MJ, Swanson RS, Ashley SW, Whang EE. Treatment outcomes associated with surgery for gallbladder cancer: a 20-year experience. *J Gastrointest Surg* 2004; **8**: 183-190 [PMID: 15036194]
 - 17 **Ouchi K**, Mikuni J, Kakugawa Y. Laparoscopic cholecystectomy for gallbladder carcinoma: results of a Japanese survey of 498 patients. *J Hepatobiliary Pancreat Surg* 2002; **9**: 256-260 [PMID: 12140616]

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