

## Management of polypoid lesions of Gallbladder: A retrospective study at King Abdullah Hospital, Bisha, Kingdom of Saudi Arabia

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### Abstract

**Objective:** To evaluate the outcome of all patients admitted with Polypoid lesions of the Gallbladder.

**Study Design:** it is a retrospective observational study

**Setting and duration:** This study is carried out at King Abdullah Hospital, Bisha, Kingdom of Saudi Arabia from July 2008 till July 2012.

**Methodology:** We included all the cases who were admitted with polypoid lesions of Gall Bladder during the above period. There were 26 patient above the age of 16 who were treated during above period.

**Results:** A total of 26 patients were admitted with polypoid lesion of Gallbladder from July 2008 till July 2012. Nineteen were female and 7 were male, with male to female ratio was 2.9:1. Out of 26 histopathology suggestive of 21 cholesterol polyp, 4 had true polyps. All the true polyps were more than  $\geq 10$ mm. 1 patient had no polyp showing changes of chronic cholecystitis. In 12(46%) patients there were associated gall stones.

**Conclusions:** The risk of Gallbladder malignancy from accidentally discovered polypoid lesion is extremely rare. Less than 6 mm polypoid lesion does not require any treatment just requires follow up in clinic. The polypoid lesions of 8 mm and above in over 50 years of age and lesion greater than 10 mm of any age requires Laparoscopic Cholecystectomy. The Gallbladder polyps associated with Gall stones also require surgical excision. Simultaneously symptomatic polypoid lesion with biliary colic also requires surgical treatment.

**Keywords:** polypoid lesion of the Gallbladder, adenocarcinoma, cholesterol polyp

### Introduction:

The 'polypoid lesions of the gallbladder' represents a wide spectrum of findings with elevated lesions of the mucosal surface of the gallbladder. Polypoid lesion of GB are classified into pseudo polyp (adenomatous hyperplasia, adenomyoma, inflammatory polyp, cholesterol polyp), and true polyps. True polyps or neoplastic polyps are further divided into benign-adenomas and malignant- adenocarcinoma.<sup>1</sup> Polypoid lesion of GB are mostly asymptomatic. Easy availability and wide spread use of ultrasonography (USG) has led to increase in detection and diagnosis of polypoid lesion of GB but their management remains a clinical dilemma. Prevalence of polyp-

oid lesion of GB is 4-7% in healthy subjects, and 2-12% in cholecystectomy specimens.<sup>1,2,3</sup>

The overwhelming majority of these lesions are nonneoplastic and represent cholesterol or inflammatory polyps, and many lesions that are called GB polyps at US prove to be small stones at cholecystectomy.<sup>4,5</sup>

Rarely, however, these lesions may be neoplastic, and malignant transformation to adenocarcinoma represents a primary concern. It has been reported that the chance of malignancy is increased in polyps with diameters of 10 mm or greater, sessile polyps, single polyp, and polyps with adjacent wall thickening or invasion and

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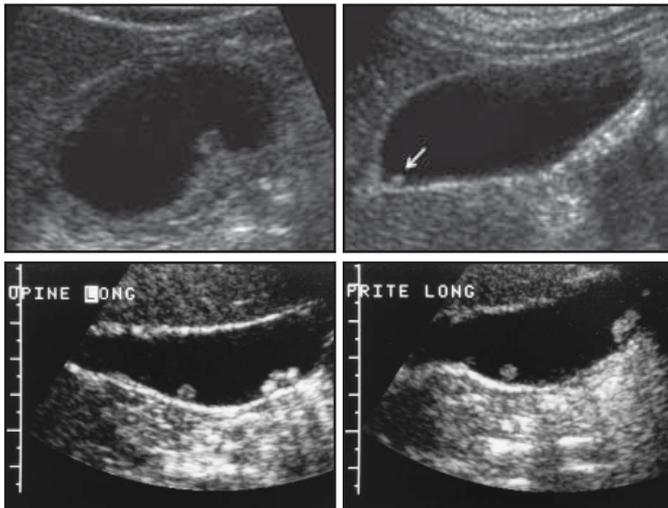


Figure 1: Ultrasound Showing GB Polyp

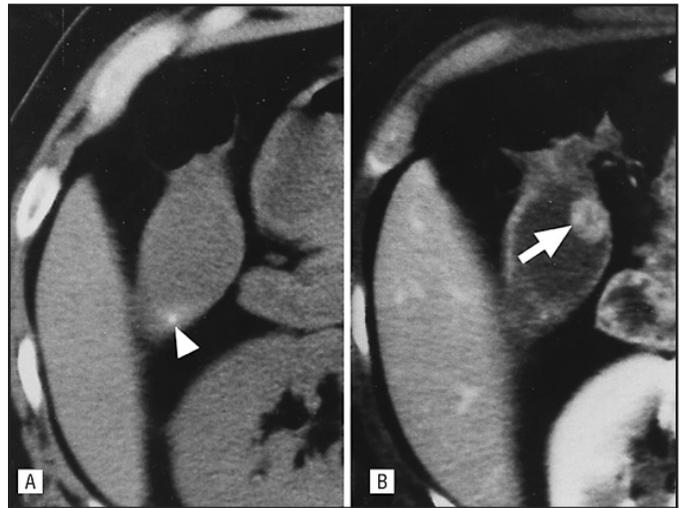


Figure 2: CT Scan showing GB Polyp

with increasing patient age.<sup>6,8</sup> Of these, size of at least 10 mm is the most well-established predictor of malignancy.<sup>7-9</sup> However, most detected polyps are less than 10 mm in size and are often too small to allow accurate characterization of additional features, such as adjacent wall thickening or sessile morphology

The polyp can be single or multiple, usually less than 10 mm in size. They have no predilection for any particular gallbladder site, and are fixed to gallbladder wall. Adenomas also have no predilection site in the gallbladder and can be associated with gallstones or cholecystitis.

Ultrasonography in good hands plays an important role in detecting polypoid lesions of GB. It represents a mass fixed to the gallbladder wall, without acoustic shadowing. Computed Tomography is also an important tool in the diagnosis. Differentiation between benign and malignant lesion is very difficult, even with high-resolution imaging

#### Materials and methods:

We present this retrospective study carried out in King Abdullah Hospital Bisha, KSA from July 2008 till July 2012. All patients age of 16 years and above are included in the study. There were 26 patients with ultrasonographically detected gall bladder polyps who underwent open or laparoscopic cholecystectomy. We have analyzed patients' demographic data as well as their

symptoms, radiographic findings, operative and histopathological findings

#### Results:

There were 26 patients with Polypoid lesion of GB detected on USG who underwent open or laparoscopic cholecystectomy during July 2008 to July 2012 at King Abdullah Hospital Bisha, KSA. One patient (3.8%) had no polyp detected from Gall bladder specimen. 19 patients (73%) were women, and 7 (27%) were men. Average age was 40 years (range 22 to 69 years). 11 patients (42%) had vague abdominal symptoms of epigastric discomfort. Majority of Polypoid lesion of GB i.e. 21 patients (80%) were pseudo

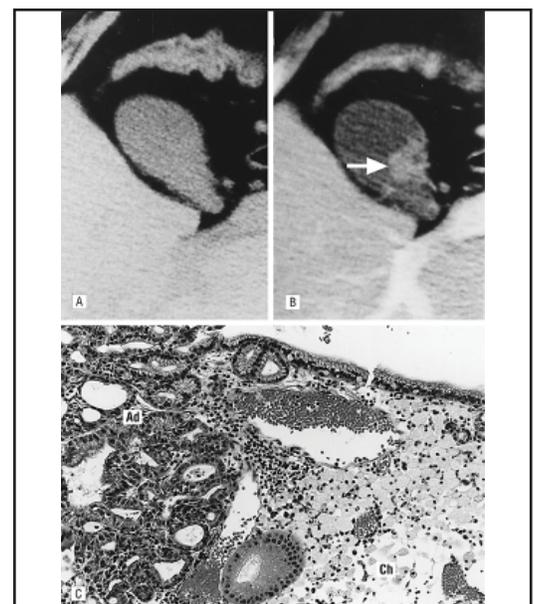


Figure 3: CT Scan showing GB Polyp

Table 1:

	Total N=26	Pseudo polyp N=21	Benign ad- enoma N=3	Adenocarci- noma N=1
<b>Sex</b>				
Male= 7 (27%)	7	4	0	0
Female= 19 (73%)	19	17	3	1
<b>Age</b>				
<50y = (69%)	18	18	2	0
>50y = (31%)	8	3	1	1
<b>Polyp size</b>				
1-5 mm 11(42%)	11	11	0	
6-9 mm 10(38%)	10	9	1	
>10 mm	4	1	2	1
<b>Number of Polyps</b>				
Single= 84%	22	18	3	1
Multiple=12%	3	3		
<b>Gall Stones</b>				
Yes =46%	12	11	1	
No = 54%	14	10	2	1

polyps (cholesterosis, cholesterol or inflammatory polyps). There were 4 (15%) true polyps. All the 4 neoplastic Polypoid lesion of GB were over  $\geq 10$  mm and only one was suspicious of malignancy (15 mm polypoid adenocarcinoma). 11 patients (42%) had Polypoid lesion of GB equal to or smaller than 5 mm, 10 were 6-9 mm and 4 were  $>10$  mm. 22 (84%) had single polyp. In 12 patients (46%) stone was also present. All patients had uneventful postoperative recovery.

#### Discussion:

Polypoid lesions of GB are mostly asymptomatic or the symptoms are non-specific and vague. Therefore they are detected incidentally and nowadays with increasing frequency because of easy availability and wide spread use of ultrasonography (USG). The clinical significance of Polypoid lesion of GB lies in its potential malignant transformation, the 'adenoma-adenocarcinoma sequence' like in colon cancer.<sup>14,15</sup> Because poor prognosis of gallbladder cancer, early detection and understanding of risk factors for malignant polyps is necessary for timely treatment

One study was done in USA to see the natural history of gall bladder polyp. Three hundred

forty-six patients (mean age, 51.6 years; range, 20–93 years) with GB polyps were included in study. There were 156 men (45%) and 190 women (55%). US follow-up (mean, 5.4 years; range, 2–11.5 years) was performed in 149 patients (43%). Polyp size was stable in 90 (60%) polyps, decreased in eight (5%), increased in one (1%), and resolved in 50 (34%). Forty-two patients (12%) underwent cholecystectomy, revealing 13 (31%) GBs with polypoid lesions, 24 (57%) with stones and no polyps, and five (12%) with neither a stone nor a polypoid lesion.

Clinical follow-up (mean, 8 years; range, 5–10.4 years) was performed in 155 patients (45%). No patient had clinical evidence of GB-related disease. Overall, no cases of GB malignancy were identified in 346 patients. Mean polyp size was 5.0 mm (range, 1–18 mm). No neoplastic polyps were found at 1–6 mm, one neoplastic polyp was seen at 7–9 mm, and two neoplastic polyps were found at greater than 10 mm.

The management of GB polyps is currently influenced by concern for the presence or development of GB carcinoma. The overall prognosis for GB cancer is poor, with a 5-year survival rate of approximately 10%<sup>14</sup> but GB carcinoma is rare, with an annual incidence of 1–2.5 cases per 100 000 persons.<sup>15</sup> Therefore, almost no polyps will progress to cancer. However, current guidelines suggest US follow up for polyps smaller than 10 mm and cholecystectomy for those 10 mm or larger.<sup>1,7,10,13</sup> This strategy may result in a large number of unnecessary follow-up US examinations, since most of the literature fails to show a progression of GB polyps to cancer, particularly for those smaller than 6 mm.

Second, it is not currently known whether GB adenomas are precursors to GB cancer. A so-called adenoma-carcinoma sequence is well accepted in the development of colon cancer, but the relationship between GB adenomas and carcinoma remains unclear.<sup>21</sup> The adenoma-carcinoma sequence was suggested by Kozuka et al<sup>22</sup>, who examined 1605 cholecystectomy specimens and found seven adenomas with

malignant change and 15 carcinomas with adenomatous residue. However, all of the adenomas with malignant change were larger than 12 mm. In addition, other authors have favoured a dysplasia-carcinoma pathway, with the dysplasia arising secondary to chronic inflammation. Molecular studies have shown that the genetic mutations frequently seen in GB cancer are absent in adenomas.<sup>23</sup> Furthermore, pathologic evaluation of 196 early-stage GB carcinomas revealed no adenomatous residue, arguing against an adenoma-carcinoma sequence.<sup>24</sup>

### Conclusion:

The risk of GB malignancy resulting from incidentally detected small polyps is extremely low. Generally it is accepted that incidentally detected GB polyps measuring 6 mm or less in young patients do not require surgical treatment. These patients only need US follow-up.<sup>1,7,10,13</sup> However, the threshold size up to which polyps should be followed, the interval of follow-up, and overall duration of follow-up remains controversial.

Current recommendations regarding the management of GB polyps suggest cholecystectomy for lesions with a diameter of 10 mm or greater but considering the inherent discrepancies of ultrasonogram, in our opinion cholecystectomy may be advised in patients having polypoid lesion of 8 mm or greater, in patients over 50 years of age or in whom follow-up is not possible.

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