

Adenomatous Polyposis of Gall Bladder: A Rare Presentation in HCV Positive Female

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Abstract

Background: Gall bladder (GB) adenomatous polyps are uncommon and are usually an incidental finding. Infections serve as a fertile soil for gall bladder polyps. Risk for GB polyps are seen in patients with hepatitis B viral (HBV) infection with HBsAg serving as a risk factor. Hepatitis C viral (HCV) infection facilitates GB stone formation and the incidence is seen more in middle aged females. **Case Description:** Hereby, we present a case of 40 year old female presenting with long term intermittent abdominal pain. Patient was found to have, positive HCV serology (HCV genotype 3) with high viral load. USG and CT showed multiple gall bladder polyps. Histology revealed multiple adenomatous polyps of gall bladder with focally dysplastic epithelium. Final diagnosis of adenomatous polyp with dysplasia was given. **Literature Review:** Gall bladder polyps are usually single and a rare occurrence. The risk of malignancy in an adenomatous polyp increases in solitary and sessile polyps. The primary goal of management of Gall bladder polyp is to prevent the development of gall bladder adenocarcinoma. The literature is short of case reports where HCV infection has been associated with GB polyps. **Clinical Significance:** In our case, multiple GB polyps were seen in a HCV positive female. This association of multiple GB polyps with HCV infection is a rare association and to the best of our knowledge has not been previously reported in the literature.

Keywords: Gall Bladder; Adenomatous Polyps; Hepatitis C.

Introduction

Gall bladder polyps are outgrowths of the gall bladder wall into its lumen. They are uncommon, affect approximately 5% of the adult population and are usually an incidental finding on ultrasonography or after cholecystectomy [1]. These are mostly asymptomatic and the detection rate has increased nowadays due to the widespread use of imaging especially abdominal ultrasound [2].

Gall bladder polyps are classified as benign or malignant. Benign polyps are further subdivided into neoplastic and non-neoplastic. Non-neoplastic include pseudotumorous lesions like cholesterosis, inflammatory polyps and cholesterol polyps. Neoplastic lesions include epithelial tumors like

adenomas, mesenchymal tumors like lipoma, hemangioma, leiomyomas and malignant polyps such as adenocarcinomas, mucinous cystadenoma and adenoacanthoma. Mostly gall bladder polyps are benign and majority are cholesterol polyps [3].

Adenomas are benign neoplasms of glandular epithelium and by definition contain atleast low grade dysplastic epithelium. Adenomas may be sessile and pedunculated. According to their pattern of growth they are subdivided into three types: tubular, papillary and tubule-papillary. Cytologically, they are classified as pyloric gland type, intestinal type, foveolar and biliary type [4].

Few studies have shown an association of gall bladder polyps with Hepatitis infection, especially HBV; positive correlation found with HBsAg levels [5]. Literature is short of cases where Hepatitis C infection has been associated with adenomas in gall bladder.

Here we present a rare case of multiple adenomas in gall bladder in a middle aged HCV positive female.

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This case is unique as literature is short of cases where gall bladder polyposis has been associated with Hepatitis C infection.

Case Report

A forty year old female presented to the hospital with complaint of long term abdominal discomfort and intermittent pain. There was no complaint of nausea, vomiting, weight loss or fatigue. Hemogram, bilirubin levels, liver function and renal function tests were normal. On abdominal ultrasound, gall bladder showed multiple polypoidal masses in gall bladder, which were confirmed by CT scan (Figure1).

On further preoperative evaluation, the patient was found to have positive HCV serology, HCV genotype 3, with very high viral load. HBV and HIV status was negative. An open extended cholecystectomy was performed subsequently.

The gross revealed a distended gall bladder which showed multiple polypoidal masses projecting in the lumen ranging from 0.2-1.5 cm throughout the body and fundus. The polypoidal masses were sessile and few were friable in appearance. No stone was present (Figure 2). Microscopy showed polypoidal growth projection from mucosa, comprising of arborizing glands of varying sizes having tubular to papillary pattern of arrangement (Figure 3,4). The lining epithelium showed both pyloric and intestinal metaplasia. Few glands focally, showed features of

mild dysplasia with nuclear stratification, enlarged hyperchromatic nucleus and prominent nucleoli (Figure 5). However no muscular layer invasion was identified (Figure 6). The stroma showed mixed inflammation with neutrophils, lymphocytes, eosinophils and plasma cells. A final diagnosis of adenomatous polyp with dysplasia was given.



Fig. 2: Gross photograph showing multiple polypoidal masses in gall bladder



Fig. 1: CT scan coronal image. The arrow point to enhancing soft tissue polypoidal ingrowths from the gall bladder walls primarily in fundal region, suggestive of gall bladder polyps.

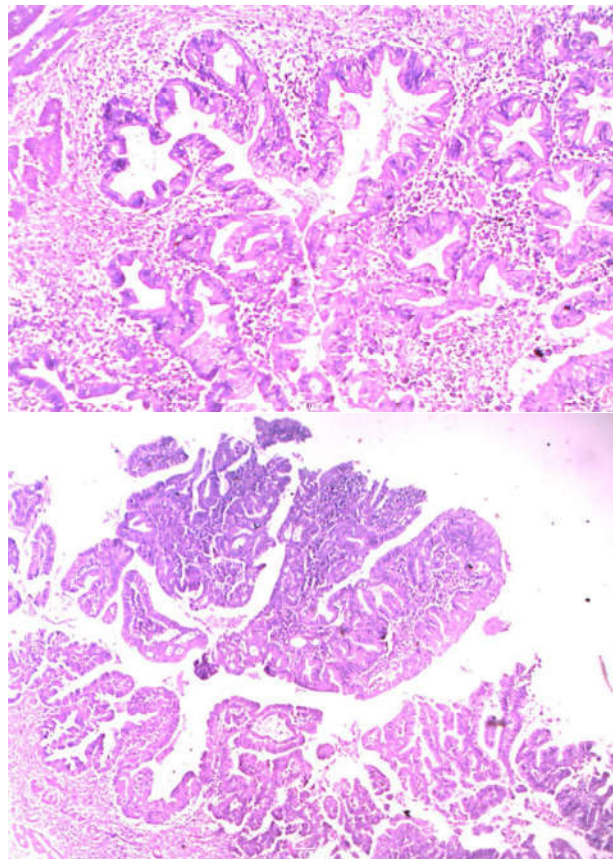


Fig. 3,4: Image shows arborizing glands with papillary to tubular configuration. (H/E 10x)

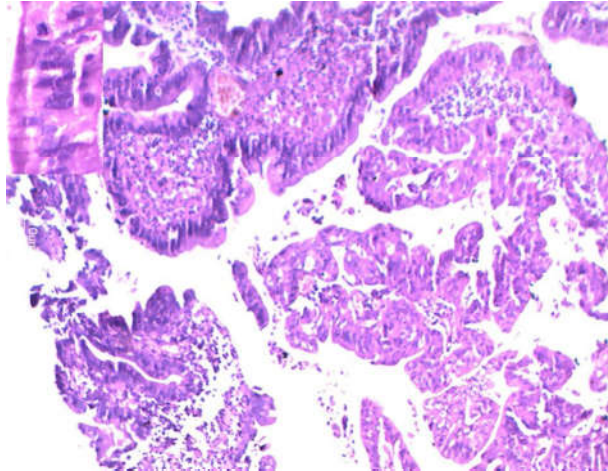


Fig. 5: Image shows glands with features of dysplasia present. (H/E 10x). Inset (40x) shows dysplastic epithelium

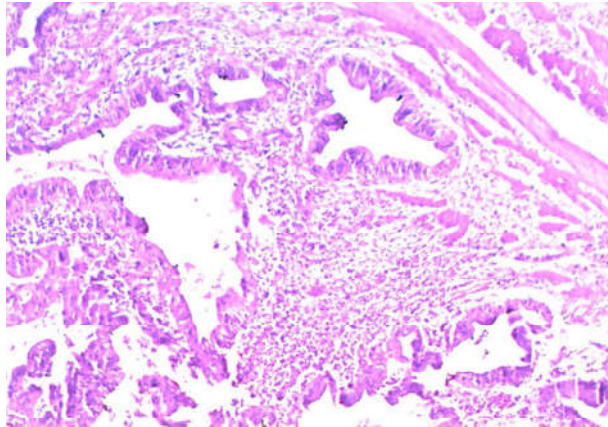


Fig. 6: Low power view showing glands reaching almost upto muscle layer, however no invasion identified. (H/E 10x)

Discussion

Adenomas are benign neoplasms of glandular epithelium. These present as polypoid masses, usually single. Gall bladder adenomas are rare, found in less than 0.5% of cholecystectomy specimens. Adenomas may cause symptoms when these are large or multiple but are usually small and asymptomatic, discovered as incidental finding. Adenomas may occur at any age but are mostly seen in middle age and mostly in females. Though rare but most of the associations have been with patients of gastrointestinal polyposis syndrome like Peutz-Jegher syndrome, Familial adenomatous polyposis, Gardner syndrome and also with Primary sclerosing cholangitis.

Gall bladder adenomas are classified like their colonic counterpart, by their architecture as tubular, papillary and tubulopapillary (when both tubular and papillary components are present in at least 20% of

adenoma). The tubular type of adenoma is most common, while the papillary pattern has been associated with higher risk of malignant transformation [4,6]. There is another classification based on their cytoarchitecture, in which adenomas are classified as pyloric gland, intestinal-type, foveolar and biliary-type. All types of adenomas have been associated with presence of flat dysplasia in gall bladder epithelium. Therefore, multiple sections and thorough examination of gall bladder is important to search for multifocality as well as rule out possibility of invasive component [6].

Both adenomas and dysplasia are considered precursor lesions of colorectal adenocarcinoma. But role of gall bladder adenomas in the pathogenesis of gall bladder carcinoma is controversial. There are contradictory studies, some showing that both adenomas and adenocarcinoma of gall bladder have different mutation pathway and molecular abnormalities [7,8]. While few studies show that adenoma may play a role in gall bladder carcinoma. Kozuka et al [8] in their study of 1605 cholecystectomies, found 7 adenomas showing malignant change, as well as 19% invasive carcinoma with adenomatous foci.

Infections are frequently associated with development of neoplasms. Viral hepatitis have been shown to be associated with adenoma development. Wey-Ran Lin et al studied prevalence of Gall bladder polyp and associated risk factors amongst Chinese population [5]. They found that Hepatitis B infected patients have a higher risk in developing polyps of gall bladder. But in their study no association was found between Viral hepatitis C infection and development of gall bladder polyps. In another study by Xu Q, it was found that hepatitis B positivity is a strong risk factor for gall bladder polyps formation [9].

There is lack of literature showing HCV association with presence of adenomas in gall bladder. However, our case was a HCV positive (high viral load) young female in her forties, who presented with symptoms of cholecystitis and was found to have multiple polyps, all sessile in morphology, largest measuring 1.5 cm. Microscopically, adenomatous polyps with tubulopapillary architecture were present, showing focal dysplasia. No invasion was seen.

For management of gall bladder polyp, the most important prognostic factor is risk of malignant potential of these polyps. Gall bladder adenocarcinoma has a poor prognosis, therefore detection of malignancy in a polyp or risk of malignant transformation in an adenomatous lesion is critical.

Size of polypoidal lesion, >10mm; solitary lesion, age more than 50 years, adenomatous nature, sessile polyps and rapid growth are considered as risk for malignant transformation in various studies [2,10].

To conclude, this case is a rare presentation of multiple adenomatous polyps seen in gall bladder. Further association with Hepatitis C infection makes this case more unique. Even though gall bladder carcinoma is a rare disease, gall bladder polyps are common and it is important to differentiate high risk polyp with malignant potential from those without any potential of malignant transformation.

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