CASE REPORT

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INTRACHOLECYSTIC PAPILLARY NEOPLASM- A CASE REPORT

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ABSTRACT

Intracholecystic Papillary Neoplasm (ICPN) is a rare entity and is a premalignant gallbladder lesion. It is usually an incidental finding on imaging and can only be diagnosed on histomorphological evaluation. Here a case of ICPN in a female (40 years of age) with a short history of abdominal pain is reported. Ultrasound examination of the abdomen revealed multiple polyps in the gallbladder. Laparoscopic cholecystectomy was done and was diagnosed as ICPN on histopathological examination.

Keywords: Intracholecystic Papillary Neoplasm, Premalignant, Gallbladder, Histopathology

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INTRODUCTION

ICPN is an uncommon and less known lesion of the gallbladder. These lesions are regarded as premalignant or precursor lesion of gallbladder cancer. According to the World Health Organization classification (2019) of the digestive system tumors, ICPN is a unique premalignant gallbladder neoplasm[1,2]. It has a better prognosis than adenocarcinoma of the gallbladder accounting for greater than 95% of malignant tumors of gallbladder [2,3]. ICPNs are mostly asymptomatic and are incidental findings in the conventional imaging modalities and by postsurgical histopathological examination [4] which is considered "gold standard" for final diagnosis[5]. Here a case of ICPN in a female patient, 40 years of age, which was diagnosed upon histopathological examination following cholecystectomy is reported.

CASE REPORT

A 40-year-old female from a rural area of Bangladesh presented to the Surgery Outpatient Department (OPD) of Medical College for Women and Hospital (MCW&H), Dhaka in mid-April 2025, with complaints of dull, non-radiating pain in the upper abdomen for the past five days. The pain was intermittent and not associated with meals, nausea, or vomiting. The patient had no previous history of fever, jaundice, weight loss, or previous similar episodes.

On general physical examination, she was alert, oriented, and afebrile. The vitals of the patient were within normal limits and stable. Mild tenderness in the right upper quadrant, with no palpable mass or signs of peritonitis were noted upon abdominal examination. Murphy's sign was negative. No hepatosplenomegaly or ascites were found.

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Routine laboratory investigations revealed a hemoglobin level of 12.2 g/dL, and other parameters of the complete blood count (CBC) were within normal limits. Liver function tests showed no abnormalities. Renal function tests, random blood sugar, and routine urinalysis were also normal. Chest X-ray and electrocardiogram findings were normal.

Ultrasonography (USG) of the abdomen revealed a gallbladder that was distended with small multiple echogenic polypoid lesions having gallbladder wall attachment, without acoustic shadowing or signs of inflammation. No gallstones or pericholecystic fluid was noted.

The patient was admitted and scheduled for elective laparoscopic cholecystectomy. The surgery was successfully carried out with no complications. The postoperative period was uneventful.

The resected gallbladder specimen was sent to the Pathology department, MCW&H, for histopathological evaluation. Gross examination showed a partly opened gallbladder measuring 10 × 3.3 cm, with a maximum wall thickness of 0.4 cm. The mucosal surface displayed multiple separate, exophytic papillary growths. The excrescences were friable, loosely attached to the wall, and some were free-floating in the lumen, appearing as sludge. The largest lesion measured 0.9 cm in maximum diameter (Figure1). Eighteen representative tissue blocks were embedded for microscopic examination.

Histologically, sections revealed high-grade dysplastic changes in the gallbladder lining epithelium (Figure 2). The exophytic lesions showed complex papillary architecture with minimal intervening stroma. The papillae were lined by markedly pleomorphic epithelial cells exhibiting hyperchromatic, enlarged nuclei with prominent nucleoli. Pseudostratification and nuclear polarity loss were evident (Figure 3,4). No stromal invasion or infiltration into the gallbladder wall was observed in any of the sections examined (Figure 5, 6). A final diagnosis of ICPN with high-grade dysplasia was made.

The patient recovered well postoperatively and was discharged in stable condition. Advise was given to the patient to undergo follow-up whole abdominal ultrasonography at the end of three months and to continue long-term clinical surveillance.

DISCUSSION

ICPN was first recognized and formally described as a distinct pathological entity by Adsay et al. in 2010[6]. World Health Organization classified ICPN as a neoplasm of the gallbladder in the same year and updated its categorization in 2019, defining it as a preinvasive lesion[7].

Although ICPNs are rare (accounting for less than 0.5% of all cholecystectomy specimens[7]) , they can be potentially fatal if left untreated, progressing to invasive carcinoma in approximately 6.4% of cases [8, 9].About 6% of gallbladder carcinomas have been found to arise in association with ICPN [10].

ICPNs are more common in women than in men, typically occurring between 38 and 83 years of age[11, 12]. Our patient, a 40-year-old female, fits within this demographic. The clinical presentation of ICPN is variable, and preoperative diagnosis is often difficult[13]. Symptoms may include abdominal pain, nausea, vomiting, and constipation [2]. In our case, the patient suffered with pain in the abdomen lasting five days.

Imaging findings of ICPN can mimic gallbladder malignancies or appear as gallbladder polyps[8]. Similarly, in our case, USG revealed multiple polyps within the gallbladder.

ICPN arises from the mucosal lining epithelium of the gallbladder and typically appears as an intraluminal mass. Grossly, these lesions may present as sessile, pedunculated, or polypoid/papillary structures, either solitary or in clusters [2, 8,9]. In our case, gross examination of the cholecystectomy specimen showed multiple, separate, sessile, friable papillary excrescences loosely attached to the gallbladder wall. The most common location of these lesionsare in the fundus and body of the gall bladder[3], consistent with our findings.

While around 50% of ICPN cases are incidental findings on imaging, conventional imaging modalities often fail to detect them reliably. Histopathological examination following surgery remains the gold standard for diagnosis [9,13]. In this case, the histopathology showed complex papillary structures lined by highly pleomorphic epithelial cells with nuclear hyperchromasia, enlargement, and prominent nucleoli—features consistent with ICPN.

Histologically, four morphologic subtypes of ICPN are described: biliary (most common), gastric, intestinal, and oncocytic[3]. Our reported case was morphologically classified as biliary type.

ICPNs are graded using a two-tiered system: low-grade dysplasia (LGD) and high-grade dysplasia (HGD). HGD is considered a significant pathological risk factor for associated invasive carcinoma[9]. Features of HGD include cellular and nuclear pleomorphism, hyperchromatic nuclei, nuclear enlargement, stratification, and prominent nucleoli [3]. Our case exhibited these features, indicating HGD, but with no evidence of invasion.

The five-year survival rate for patients with non-invasive ICPN is estimated to be 78%, compared to around 60% for those with associated invasive carcinoma [13]. The patient was advised to undergo follow-up abdominal USG and attend outpatient review. Long-term surveillance is recommended, even after complete resection of the ICPN.

CONCLUSION

ICPN is a rare but potentially premalignant lesion of the gallbladder that often exhibit nonspecific clinical symptoms, making preoperative diagnosis challenging. While most cases are benign, a small proportion may progress to invasive carcinoma if left undetected or untreated. This case highlights the importance of considering ICPN in the differential diagnosis of gallbladder polyps and underscores the critical role of histopathological examination in establishing a definitive diagnosis and guiding appropriate clinical management.

CONFLICT OF INTEREST

There is no conflict of interest.

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Figure 1: Cut open gallbladder with multiple papillary excrescences

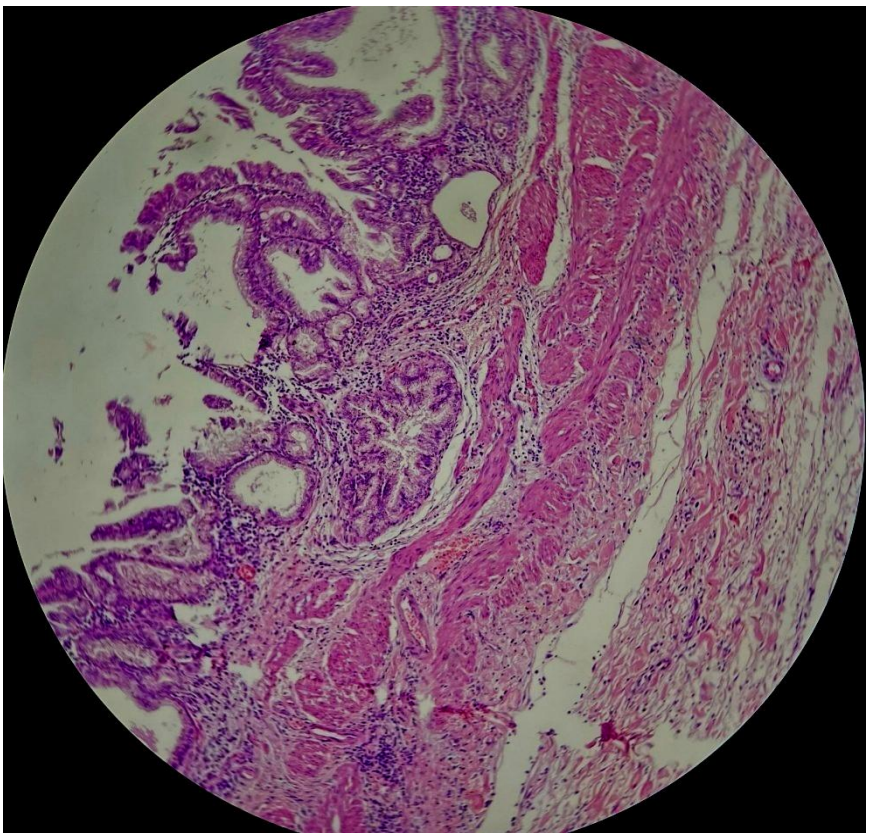

Figure 2: Section showing gallbladder wall with dysplastic lining mucosa H&E X100

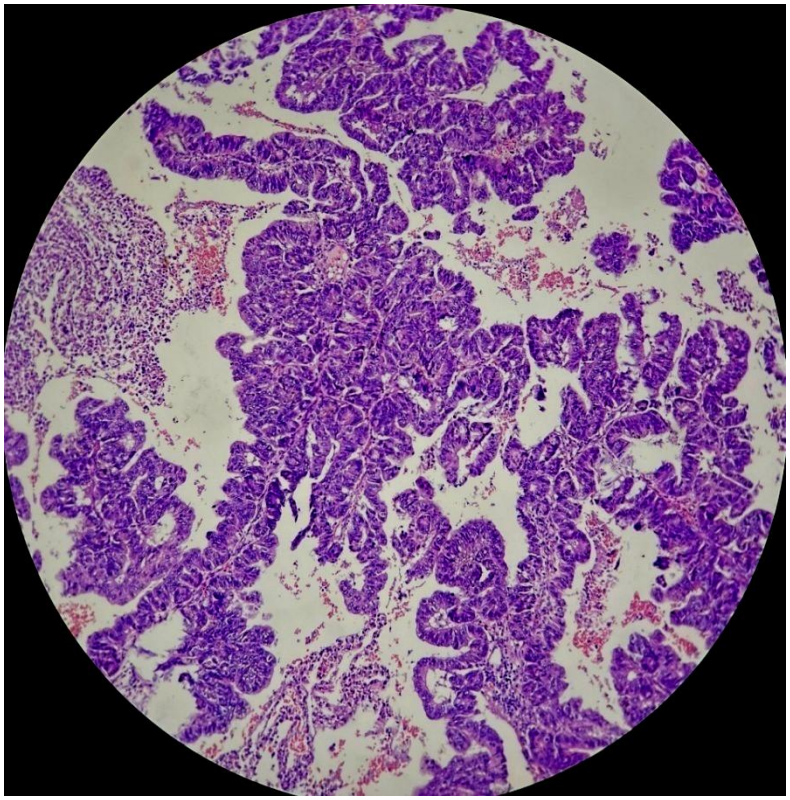

Figure 3: Microscopic section of papillary excrescences
H&EX40

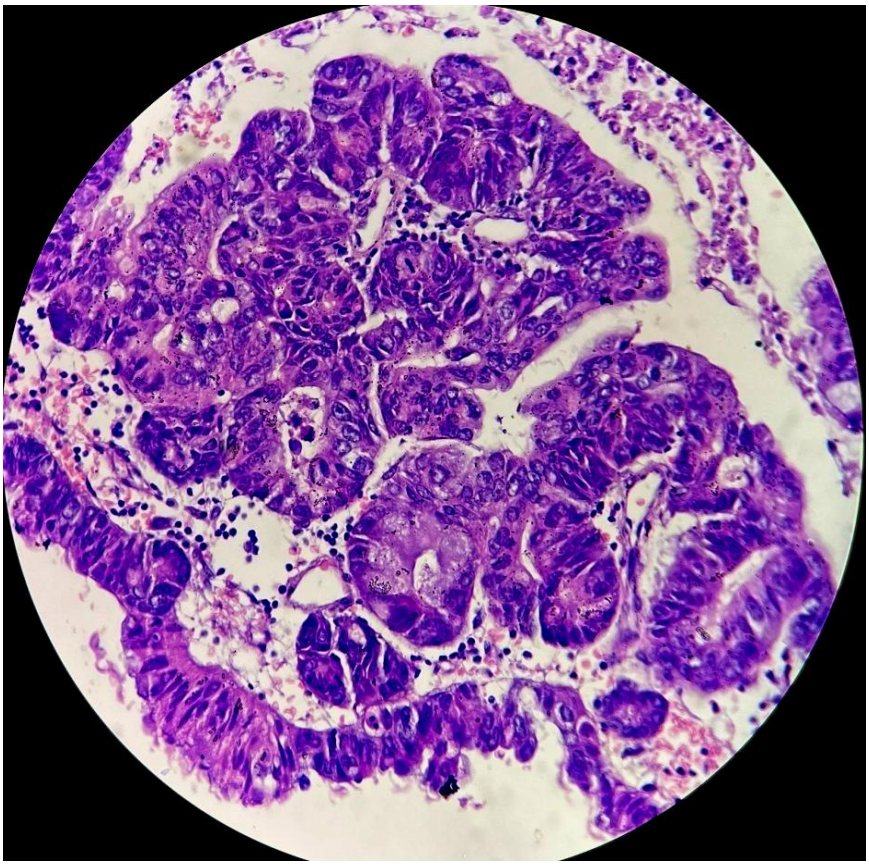

Figure 4: Section of papillae
H&EX 100

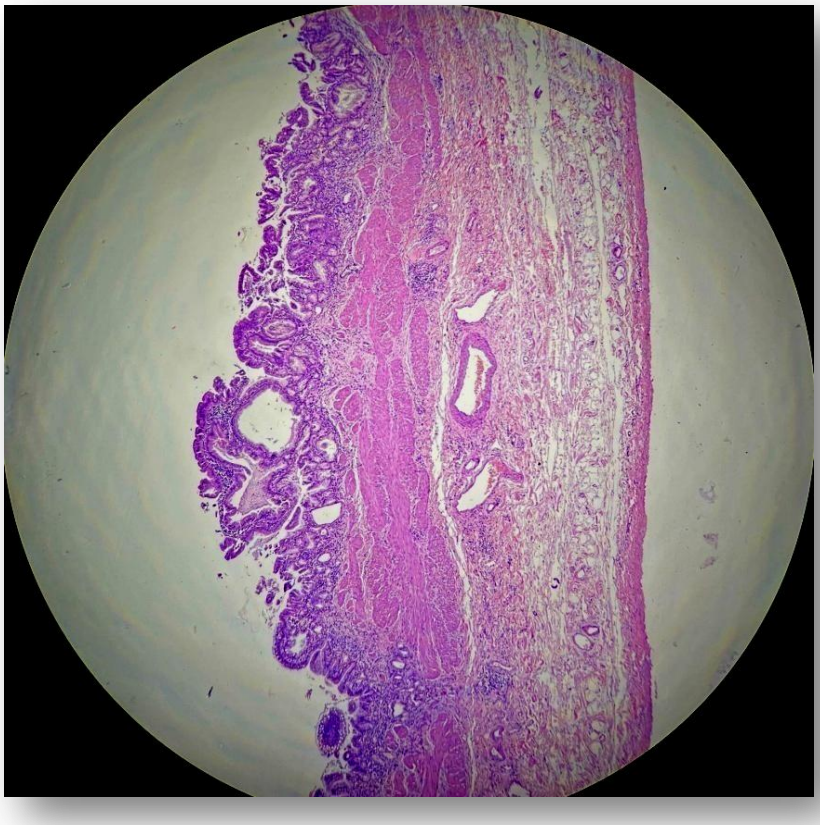

Figure 5: Gallbladder wall showing no evidence of invasion H&E X40

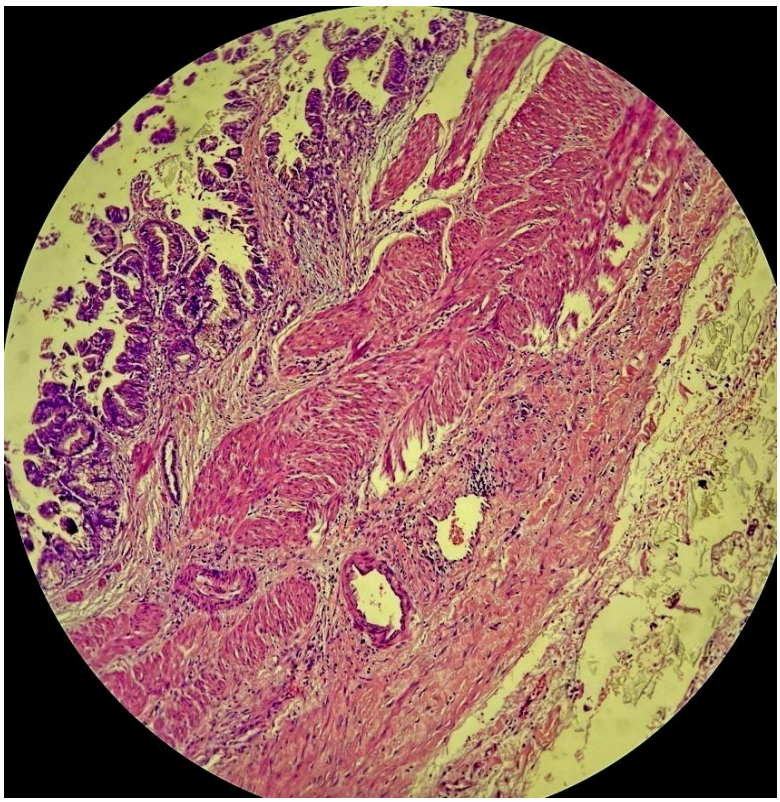

Figure 6: Gallbladder wall showing no evidence of invasion H&E X100