**Scholars Journal of Medical Case Reports**
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Pathology

# Intracholecystic Papillary Neoplasm with Associated Invasive Adenocarcinoma Incidentally Diagnosed Following Cholecystectomy: A Case Report

Ihssan Elouarith[1]*

[1]Department of Pathology, Azzamouri Provincial Hospital, Kenitra, Morocco

**DOI:** https://doi.org/10.36347/sjmcr.2026.v14i08.038 | **Received:** 03.07.2026 | **Accepted:** 21.08.2026 | **Published:** 26.08.2026

***Corresponding author:** Ihssan Elouarith
Department of Pathology, Azzamouri Provincial Hospital, Kenitra, Morocco

**Abstract** **Case Report**

***Background:*** Intracholecystic papillary neoplasm (ICPN) is an uncommon preinvasive epithelial tumor of the gallbladder that develops as an exophytic intraluminal lesion and exhibits a broad spectrum of histological features. Since its recognition as a distinct clinicopathological entity, ICPN has attracted increasing attention because of its heterogeneous morphology and its potential to progress to invasive carcinoma [4,8]. ***Case presentation:*** A female patient presented with persistent right upper quadrant pain. Abdominal ultrasonography suggested calculous cholecystitis, and laparoscopic cholecystectomy was performed without additional preoperative cross-sectional imaging. Gross examination of the surgical specimen unexpectedly demonstrated a thin-walled gallbladder measuring 8.5 × 4 × 3 cm, containing a 3.5 × 2 cm intraluminal polypoid mass without gallstones. Microscopic examination revealed an intracholecystic papillary neoplasm associated with a focal invasive adenocarcinoma corresponding to pathological stage pT1b. The patient was lost to follow-up eight months after surgery. ***Conclusion:*** This case illustrates the diagnostic challenge posed by ICPN, which may clinically mimic common benign gallbladder diseases and remain undetected before surgery. It also underlines the pivotal role of meticulous gross examination and comprehensive histopathological assessment in identifying this rare neoplasm and accurately documenting an associated invasive component.

**Keywords:** Intracholecystic papillary neoplasm; Gallbladder; Early invasive adenocarcinoma; Cholecystectomy; Case report.



## 1. INTRODUCTION

Intracholecystic papillary neoplasm (ICPN) is a rare epithelial neoplasm arising from the gallbladder mucosa and characterized by a grossly identifiable papillary or polypoid lesion projecting into the gallbladder lumen [4,8]. It is currently regarded as a precursor lesion with malignant potential and represents the gallbladder counterpart of other intraductal papillary neoplasms affecting the pancreatobiliary tract [4,8].

Because clinical manifestations are usually nonspecific, establishing the diagnosis before surgery remains challenging. Most patients present with symptoms suggestive of benign gallbladder disease, such as right upper quadrant pain or cholecystitis, while others are diagnosed incidentally after cholecystectomy performed for presumed inflammatory or lithiasic conditions [1,2].

Histopathologically, ICPNs display variable architectural patterns and epithelial phenotypes. An associated invasive adenocarcinoma may be identified in a subset of patients; however, early-stage invasive lesions generally carry a better prognosis than conventional gallbladder adenocarcinoma, emphasizing the importance of thorough pathological examination and accurate staging [6,8].

We report the case of an intracholecystic papillary neoplasm associated with a focal invasive adenocarcinoma (pT1), unexpectedly diagnosed after laparoscopic cholecystectomy performed for presumed calculous cholecystitis. This report highlights the value of systematic macroscopic examination and detailed histopathological evaluation in detecting uncommon gallbladder neoplasms that may otherwise remain unrecognized.

## 2. CASE PRESENTATION

A female patient presented to the emergency department with persistent right upper quadrant abdominal pain. Physical examination revealed localized tenderness over the right hypochondrium, whereas no palpable abdominal mass or signs of generalized

peritonitis were identified. Routine laboratory investigations were unremarkable. Abdominal ultrasonography suggested calculous cholecystitis, and the patient was referred for laparoscopic cholecystectomy.

No computed tomography (CT) scan or magnetic resonance imaging (MRI) was performed before surgery because the clinical and ultrasonographic findings were considered consistent with uncomplicated gallbladder disease. The postoperative course was uneventful, and the surgical specimen was submitted for routine histopathological examination.

Macroscopic examination: The specimen consisted of a closed gallbladder measuring 8.5 × 4 × 3 cm. After opening, the wall appeared thin without gross evidence of mural thickening. Unexpectedly, a solitary exophytic polypoid lesion measuring 3,5x2 cm was identified, arising from the mucosal surface and projecting into the gallbladder lumen. The lesion had a soft, friable papillary appearance with a broad implantation base. No gallstones were identified despite the preoperative diagnosis of calculous cholecystitis. The remaining mucosa appeared grossly unremarkable.

Representative tissue samples were extensively submitted, including the entire polypoid lesion, the gallbladder in its entirety and duct margin.

Histological examination demonstrated a complex papillary epithelial proliferation supported by delicate fibrovascular cores, consistent with intracholecystic papillary neoplasm (ICPN). The neoplastic epithelium exhibited architectural complexity with predominantly papillary growth and high-grade dysplastic changes. Nuclear stratification, enlargement, hyperchromasia, and loss of polarity were readily identified.

Careful examination of multiple tissue sections disclosed a very limited invasive adenocarcinoma, represented by small irregular infiltrating glands extending beyond the basement membrane into the lamina propria and muscular layer. No lymphovascular invasion, perineural invasion, or tumor necrosis was identified in the examined sections. According to the current TNM classification, the lesion was classified as pT1b.

The cystic duct resection margin was free of dysplasia and invasive carcinoma.

The postoperative recovery was uneventful. Following histopathological diagnosis, unfortunately, the patient was lost to follow-up for approximately eight months after surgery, precluding further assessment of disease progression or recurrence.

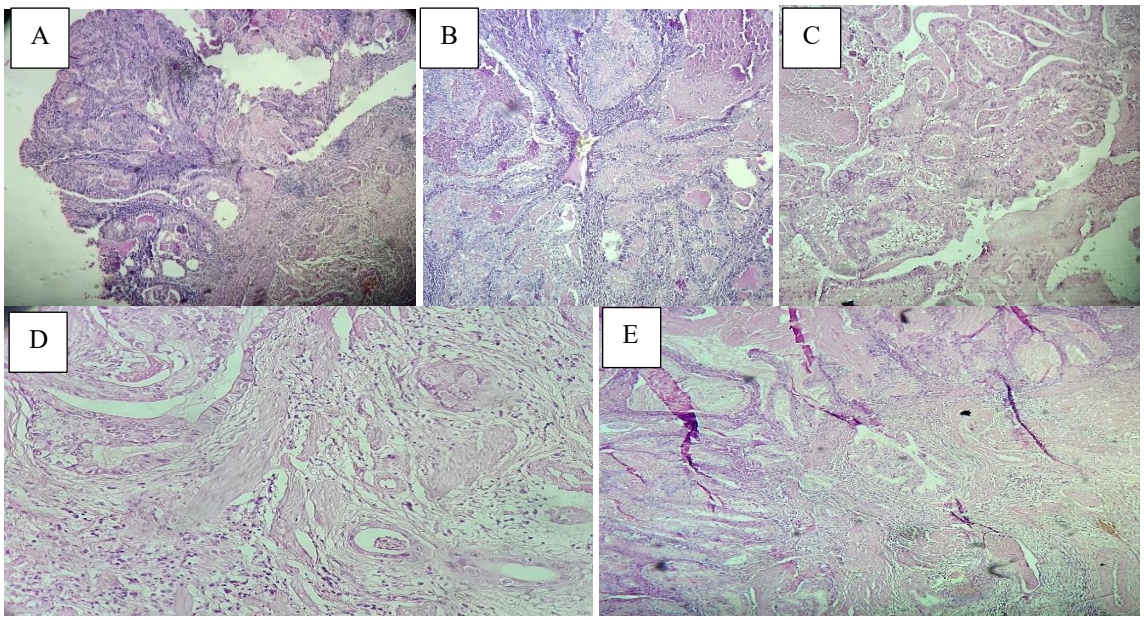


**Figure 1: Histological features of intracholecystic papillary neoplasm with associated invasive adenocarcinoma:(A) Complex papillary proliferation within the gallbladder lumen. (B–C) High-power views showing cytological atypia of the neoplastic epithelium. (D–E) Tumor nests and glands infiltrating the muscular layer**

## 3. DISCUSSION

Intracholecystic papillary neoplasm (ICPN) is an uncommon epithelial neoplasm of the gallbladder, accounting for only a small proportion of gallbladder tumors. Since its formal recognition as a distinct pathological entity by the World Health Organization, awareness of its clinicopathological characteristics has increased, allowing better distinction from conventional gallbladder adenocarcinoma and other polypoid lesions of the gallbladder [4,8].

The clinical presentation of ICPN is highly variable and lacks specific features. Most patients complain of right upper quadrant pain or symptoms suggestive of chronic or acute cholecystitis, whereas others remain completely asymptomatic and are diagnosed incidentally after cholecystectomy. Consequently, establishing a preoperative diagnosis remains difficult, particularly when imaging studies are limited or interpreted in favor of benign gallbladder disease [1,2]. In our patient, ultrasonography suggested calculous cholecystitis, whereas pathological examination unexpectedly demonstrated a polypoid neoplasm without associated gallstones, illustrating the discrepancy that may exist between the clinical impression and the final diagnosis.

Preoperative imaging plays an important role in the evaluation of suspected intracholecystic papillary neoplasms (ICPNs), although no radiological finding is considered pathognomonic. Transabdominal ultrasonography is usually the initial imaging modality and may reveal an intraluminal polypoid or papillary mass, occasionally associated with focal gallbladder wall thickening. However, these lesions may be misinterpreted as inflammatory polyps, adenomas, or manifestations of cholecystitis, making a definitive preoperative diagnosis challenging [1,2]. Contrast-enhanced computed tomography (CT) and magnetic resonance imaging (MRI), particularly when combined with magnetic resonance cholangiopancreatography (MRCP), provide a more comprehensive evaluation by assessing the morphology of the lesion, the depth of mural invasion, adjacent organ involvement, and regional or distant metastatic disease when malignancy is suspected [1,8]. In selected cases, endoscopic ultrasonography (EUS), with or without fine-needle aspiration (FNA), may further characterize indeterminate gallbladder lesions; however, tissue sampling is not routinely recommended because of its variable diagnostic yield and the theoretical risk of tumor dissemination [3,8]. In the present case, only ultrasonography was performed and suggested calculous cholecystitis, illustrating that ICPN may remain radiologically unsuspected until histopathological examination of the resected specimen.

Macroscopic examination remains a cornerstone for the recognition of ICPN. These tumors typically present as solitary exophytic papillary or polypoid lesions projecting into the gallbladder lumen and are usually large enough to be identified on gross inspection. Unlike conventional gallbladder adenocarcinoma, diffuse mural thickening is often absent, emphasizing the importance of systematic opening of the specimen and careful inspection of the mucosal surface during routine pathological examination [1,5]. In our case, the lesion measured 3.5 cm and was readily identified only after opening the gallbladder, while the wall remained thin and grossly unremarkable.

From a pathological perspective, ICPN represents a distinct preinvasive epithelial neoplasm characterized by an exophytic papillary or tubulopapillary proliferation measuring at least 1 cm, arising from the gallbladder mucosa [4,8]. According to the 2019 WHO Classification of Digestive System Tumours, ICPNs are categorized on the basis of their predominant epithelial lineage into biliary, gastric, intestinal, and oncocytic subtypes, although mixed phenotypes are not uncommon [4,8]. Histologically, these lesions exhibit variable architectural complexity with papillary, tubular, or tubulopapillary growth patterns supported by delicate fibrovascular cores. Cytological atypia ranges from low-grade to high-grade intraepithelial neoplasia, with the latter being more frequently associated with stromal invasion [4,8].

The pathological evaluation of ICPN requires meticulous macroscopic examination and extensive histological sampling, particularly from the tumor base and its interface with the gallbladder wall, as invasive carcinoma may be focal and easily overlooked [6,7]. In our case, comprehensive sampling enabled the identification of only a minute focus of stromal invasion, resulting in a final pathological stage of pT1b, highlighting the pivotal role of careful tissue examination in accurate staging.

Immunohistochemically, the expression profile generally reflects the predominant epithelial differentiation and may assist in subclassification. **CK7** is consistently expressed in most ICPNs irrespective of subtype, whereas **CK20** and **CDX2** are more frequently observed in lesions showing intestinal differentiation [4,8]. Gastric-type ICPNs typically express **MUC5AC** and **MUC6**, while biliary-type lesions often demonstrate **MUC1** expression, a phenotype that has been associated with a higher likelihood of invasive behavior and a less favorable biological profile [4,8]. Conversely, intestinal-type neoplasms usually exhibit **MUC2** positivity together with CDX2 expression, reflecting intestinal epithelial differentiation [4,8]. Although immunohistochemistry is not mandatory for establishing the diagnosis, it provides valuable information regarding epithelial lineage and may facilitate distinction from other papillary or polypoid gallbladder lesions, particularly in morphologically challenging cases [7,8].

One of the most debated aspects of ICPN concerns its biological behavior. Although these neoplasms are recognized as precursor lesions with malignant potential, their prognosis appears more favorable than that of conventional gallbladder adenocarcinoma when complete surgical excision is achieved, particularly in the absence of advanced invasion [6,8]. This favorable outcome has been attributed to their predominantly intraluminal growth pattern, earlier clinical detection, and lower frequency of deep mural infiltration at the time of diagnosis. Nevertheless, exceptional aggressive cases with distant

metastases have been reported, indicating that ICPN should not be considered uniformly indolent [6].

Another important consideration is the role of the pathologist in guiding patient management. Because ICPN is frequently diagnosed only after cholecystectomy, pathological examination directly influences postoperative staging and the decision regarding additional treatment or surveillance. Thorough gross examination, adequate sampling of the entire lesion, accurate assessment of the depth of invasion, evaluation of surgical margins, and precise pathological staging are therefore essential to optimize patient care [4,7,8].

Our case shares several clinicopathological features with previously published reports, including nonspecific clinical manifestations, incidental postoperative diagnosis, and the presence of an associated invasive adenocarcinoma [1,3,5]. However, it is distinguished by the unexpected absence of gallstones despite the preoperative diagnosis of calculous cholecystitis and by the identification of only a very limited invasive component, emphasizing the value of meticulous pathological examination in revealing clinically unsuspected malignant lesions.

## 4. CONCLUSION

Intracholecystic papillary neoplasm (ICPN) remains an uncommon gallbladder neoplasm that is frequently overlooked in the preoperative setting because of its nonspecific clinical manifestations and radiological resemblance to benign gallbladder disease [1,2]**.** The present case emphasizes that even patients initially diagnosed with calculous cholecystitis may harbor an unsuspected neoplastic lesion.

From a pathological perspective, meticulous gross examination of every cholecystectomy specimen, followed by extensive histological sampling of any polypoid lesion, is essential to establish the diagnosis, accurately assess the presence and extent of stromal invasion, and provide appropriate pathological staging [7,8]**.**

Although ICPN generally carries a more favorable prognosis than conventional gallbladder adenocarcinoma when detected at an early stage, the occurrence of an invasive component warrants careful pathological evaluation and appropriate postoperative management [6,8]. Our case further illustrates the importance of routine histopathological examination of all gallbladder specimens, even when surgery is performed for apparently benign biliary disease.

Further accumulation of well-documented cases integrating clinicopathological, histomorphological, and molecular findings will improve our understanding of the biological behavior of ICPN and may contribute to optimizing diagnostic criteria and therapeutic strategies [6,8].

## REFERENCES


1. Helal I, Jouini R, Ben Brahim E, Cherif M, Khanchel F, Chadli-Debbiche A. *Intracholecystic papillary neoplasm: A case report.* Int J Surg Case Rep. 2025. doi: 10.1016/j.ijscr.2025.110937
2. Bargaje SN, Ramteke H, Tare AK. *Intracholecystic Papillary Neoplasm: A Rare Case Report.* Cureus. 2024. doi:10.7759/cureus.69955
3. Taqwa S, Soma D, Ehresmann K, El-Hinnawi A. *Intracholecystic Papillary Neoplasm: A Case Report.* Cureus. 2024. doi:10.7759/cureus.66309
4. WHO Classification of Tumours Editorial Board. Digestive System Tumours. 5th ed. Lyon: International Agency for Research on Cancer; 2019.
5. Subedee A, Yadav S, Tiwari K, Yadav CS, Gurung B, Khanal S. An Incidental Finding of Intracholecystic Papillary Neoplasm- A Rare Case Report. Am J Surg Case Rep. 2025;6(2):1164.
6. Suda T, Sato Y, Ito Y, Kaji K, Terasaki S, Nakanuma Y. *Intracholecystic papillary neoplasm acquiring malignant characteristics and* leading to multiple liver metastases: A case report. JGH Open. 2023. doi:10.1002/jgh3.12994
7. Yoshida S, Kouchi Y, Eto R, Ohtsuka M, Kishimoto T. Intracholecystic Papillary Neoplasm With Associated Invasive Carcinoma, Accompanied by Tumor Thrombi of Hepatoid Adenocarcinoma: A Case Report. Case Reports in Pathology. 2025. doi:10.1155/2025/7736309
8. Adsay V, Jang KT, Roa JC, Dursun N, Ohike N, Bagci P, et al. Intracholecystic papillary-tubular neoplasms (ICPN) of the gallbladder: clinicopathologic and immunohistochemical analysis of 123 cases. Am J Surg Pathol. 2012;36(9):1279–1301. doi:10.1097/PAS.0b013e31825d9f87c.