

Carcinoma of Gallbladder Associated with Pancreatic Pseudocyst: A Rare Case Report

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Abstract

Gallbladder carcinoma is a seldom-occurring tumor, but its occurrence is elevated in specific regions globally. Typically, gallbladder carcinoma is detected in advanced stages, mainly due to the absence of submucosa in the gallbladder, which impedes its progression. The five-year survival rate for this condition is less than 5%. On the other hand, pancreatic pseudocyst, although not common, is a known complication of acute pancreatitis and pancreatic injury. However, it is rarely associated with gallbladder carcinoma. In this case report, we present an instance of a 35-year-old female who developed gallbladder carcinoma along with a pancreatic pseudocyst.

Keywords: Gallbladder Cancer, Gallstone, Pancreatitis, Pancreatic Pseudocyst

1. Introduction

Gallbladder carcinoma is a rare neoplasm making it the fifth most common gastrointestinal malignancy with an incidence of 1 to 2 per 100,000 in the US and 22 per 100,000 in women in Delhi [1]. However, it is usually diagnosed at an advanced stage with an overall median survival of less than 6 months as the gall bladder has a thin wall, narrow lamina propria, and single muscular layer. It usually presents in the 6th to 7th decade of life with a female-to-male ratio of 3.4:1 [2]. Only 0.3 to 3% of patients develop gallbladder carcinoma, although approximately sixty-nine to eighty-six percent of patients have a gallstone disease history. Other risk factors of gallbladder carcinoma include porcelain gallbladder, Mirizzi syndrome, ethanol & tobacco abuse, gallbladder polyp size > 10mm, anomalous pancreaticobiliary duct junction, and chronic infection with *Salmonella typhi*. Sixty percent of the tumor arises from the fundus of the gallbladder [3]. The pathogenesis of carcinoma gallbladder follows the progression from metaplasia to dysplasia to carcinoma.

Most pancreatic pseudocysts occur as a consequence of acute pancreatitis. But, they may also occur in the setting of chronic pancreatitis, postoperatively, or after pancreatic trauma [4]. One common mechanism for carcinoma of gallbladder and pancreatitis is abnormal pancreaticobiliary duct junction [5,6]. Pancreatic pseudocyst associated with gallbladder carcinoma occurs very rarely. We here present an unusual case of carcinoma of the gallbladder with a pancreatic pseudocyst. A preprint has previously been published [7].

2. Case Report

A 35-year-old female presented at the Department of General Surgery, Tribhuvan University Teaching Hospital in Kathmandu, Nepal, complaining of pain in the upper middle and right upper abdomen for the past year. The pain was intermittent, not radiating to other areas of the abdomen, but had worsened over the past month. She also experienced episodes of vomiting, significant weight loss of approximately 6 kg, and shortness of breath while

sitting or lying down. There was no history of fever, jaundice, loss of appetite, itching, dark stools, or pale-colored stool.

During the abdominal examination, a firm, smooth, non-tender mass measuring approximately 10x14 cm was detected in the upper middle and right upper abdomen. Abdominal ultrasound revealed

signs of acute pancreatitis with the presence of a pseudocyst and a mass in the gallbladder. The levels of CEA (Carcinoembryonic Antigen) were measured at 1.5, and CA 19.9 (Cancer Antigen 19-9) was less than 1.4. Upper gastrointestinal (UGI) endoscopy showed a bulge in the first part of the duodenum (D1), possibly due to external compression (Figure 1).

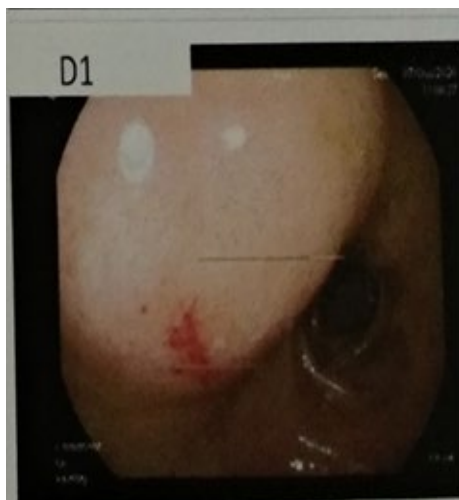


Figure 1: Showing Bulge in D1 during UGI Endoscopy.

The contrast-enhanced computed tomography (CECT) of the abdomen revealed findings consistent with acute interstitial pancreatitis, accompanied by a pancreatic pseudocyst measuring 19x9.5x5.8 cm. The pseudocyst was located in the lesser sac region and extended into the left anterior pararenal area and the right

mesentery. Additionally, there was a heterogeneously enhancing asymmetric soft tissue thickening measuring approximately 2.7x1.9 cm, originating from the posterior wall of the body of the gallbladder (Figure 2 and 3).

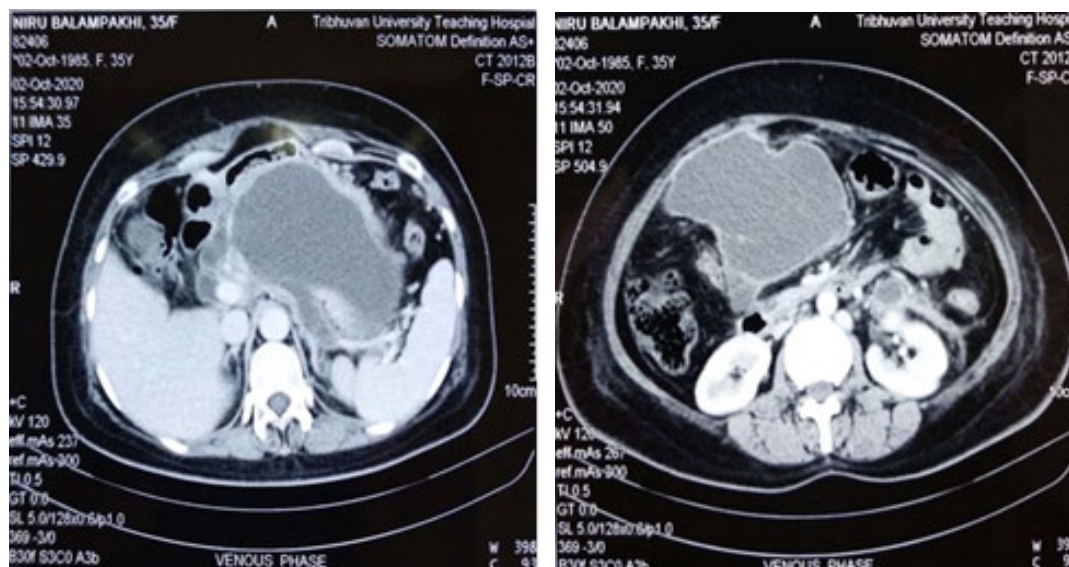


Figure 2 and 3: Showing Acute Interstitial Pancreatitis with Pancreatic Pseudocyst and Mass Arising from Posterior Wall of Body of Gallbladder.

An extended cholecystectomy with cystogastrostomy was done (Figure 4). Intraoperatively, the patient presented with frozen Calot's triangle, a pancreatic pseudocyst in the lesser sac containing

around 500 ml of discolored fluid, and a 2.5 cm hard nodular mass on the body of the gallbladder towards the peritoneal wall (Figure 5 and 6).

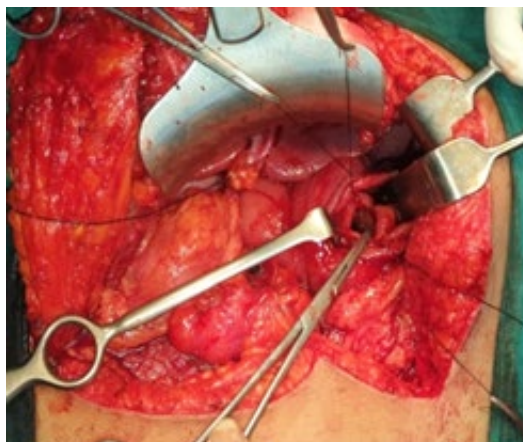


Figure 4: Showing Intraoperative Picture of Extended Cholecystectomy with Cystogastrostomy.



Figure 5 and 6: Showing Hard Nodular Mass on the Body of Gallbladder.

Her histopathological examination (Figure 7 and 8) showed adenocarcinoma, biliary type with tumor extending upto

perimuscular connective tissue and perineural invasion present, AJCC stage: pT2aN1.

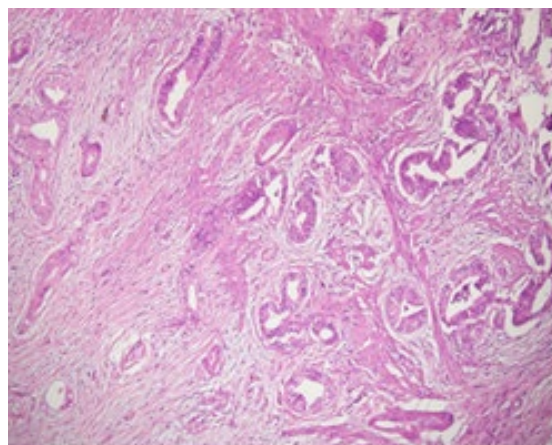
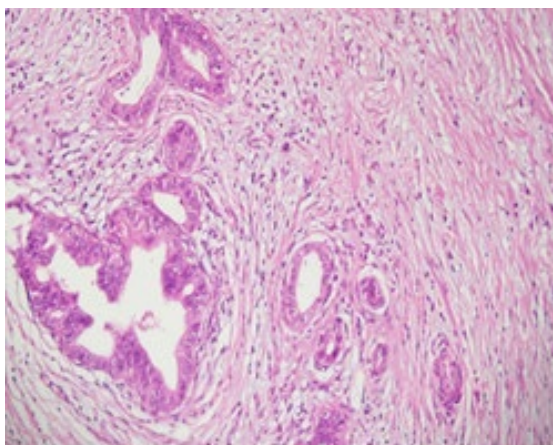


Figure 7 and 8: Showing Adenocarcinoma in HPE.

3. Discussion

Gallbladder cancer is a rare neoplasm of the gastrointestinal tract; however, it is the most common malignancy of the biliary tract. In 2018, GLOBOCAN reported high age-standardized incidence rate (ASIR) of gall bladder carcinoma in South Asia. Cholelithiasis is the most common risk factor for developing gallbladder cancer [8]. There is an approximately 10-fold higher risk of developing gallbladder cancer in patients with gallstones larger than 3 cm [9].

As a high proportion of tumors is already advanced at the time of presentation, the prognosis of gall bladder carcinoma is generally extremely poor. This is reflected by the 5-year survival for all stages of gallbladder cancer which is about 5% [10,11]. Resection remains the only chance for a cure because chemotherapy and radiotherapy are ineffective as primary treatments. Various surgical options for treatment have evolved over the last 10 years such as procedures ranging from a simple cholecystectomy to a radical or extended cholecystectomy. They may include liver resections, from segmentectomies to right hepatectomies and trisectionectomy.

Pancreatic pseudocysts form usually after 4 weeks of initial insult and are commonly associated with acute pancreatitis or pancreatic trauma [12]. They may also occur in approximately 20%-40% of patients with chronic pancreatitis [13].

Pancreatic pseudocyst may resolve spontaneously and thus can be managed conservatively by watchful monitoring. (14) Indications for decompression of pseudocyst are abdominal pain, nausea and vomiting, superimposed infection, and gastric outlet or biliary tract obstruction [15]. Association of gallbladder carcinoma with pancreatic pseudocyst is rare. Only a few case studies have been reported of this association.

Conflict of interest

None to declare.

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Consent to participate

Written informed consent was obtained from the patient for the publication of this case report and accompanying images.

Ethical approval

Not required.

Registration of Research Studies

Not applicable.

Guarantor

Diwan Shrestha

Declaration of competing interest

The authors declare no competing interests.

References

1. Randi, G., Franceschi, S., & La Vecchia, C. (2006). Gallbladder cancer worldwide: geographical distribution and risk factors. *International journal of cancer*, 118(7), 1591-1602.
2. Hsing, A. W., Gao, Y. T., Han, T. Q., Rashid, A., Sakoda, L. C., Wang, B. S., ... & Fraumeni, J. F. (2007). Gallstones and the risk of biliary tract cancer: a population-based study in China. *British journal of cancer*, 97(11), 1577-1582.
3. Shaffer, E. A. (2008). Gallbladder cancer: the basics. *Gastroenterology & hepatology*, 4(10), 737.
4. Bradley, E. L. (1993). A clinically based classification system for acute pancreatitis: summary of the International Symposium on Acute Pancreatitis, Atlanta, Ga, September 11 through 13, 1992. *Archives of surgery*, 128(5), 586-590.
5. Yamauchi, S., Koga, A., Matsumoto, S., Tanaka, M., & Nakayama, F. (1987). Anomalous junction of pancreaticobiliary duct without congenital choledochal cyst: a possible risk factor for gallbladder cancer. *American Journal of Gastroenterology (Springer Nature)*, 82(1).
6. Sameshima, Y., Muto, Y., Uchimura, M., Waki, S., & Hayashi, T. (1982). Clinicopathological study of the gallbladder in congenital dilatation of the bile duct--with special reference to the association with cancer. *Nihon Shokakibyō Gakkai Zasshi= The Japanese Journal of Gastro-enterology*, 79(5), 1129-1136.
7. Shrestha, D., Shrestha, B., Gyawali, P., Kansakar, P., & Pakhrin, K. (2023). Carcinoma of gallbladder associated with pancreatic pseudocyst: A rare case report. *Authorea Preprints*.
8. Serra, I., Calvo, A., Báez, S., Yamamoto, M., Endoh, K., & Aranda, W. (1996). Risk factors of gallbladder cancer: An international collaborative case-control study. *Cancer: Interdisciplinary International Journal of the American Cancer Society*, 78(7), 1515-1516.
9. Diehl, A. K. (1983). Gallstone size and the risk of gallbladder cancer. *Jama*, 250(17), 2323-2326.
10. Chan, C. P., Chang, H. C., Chen, Y. L., Yang, L. H., Chen, S. T., Kuo, S. J., & Tsai, P. C. (2003). A 10-year experience of unsuspected gallbladder cancer after laparoscopic cholecystectomy. *International surgery*, 88(3), 175-179.
11. Bartlett, D. L., Fong, Y., Fortner, J. G., Brennan, M. F., & Blumgart, L. H. (1996). Long-term results after resection for gallbladder cancer. Implications for staging and management. *Annals of surgery*, 224(5), 639.
12. Cannon, J. W., Callery, M. P., & Vollmer Jr, C. M. (2009). Diagnosis and management of pancreatic pseudocysts: what is the evidence?. *Journal of the American College of Surgeons*, 209(3), 385-393.
13. Bradley III, E. L. (1989). Complications of chronic pancreatitis. *Surgical Clinics of North America*, 69(3), 481-497.
14. Brugge, W. R. (2004). Approaches to the drainage of pancreatic pseudocysts. *Current opinion in gastroenterology*,

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- 20(5), 488-492.
15. Varadarajulu, S., Bang, J. Y., Sutton, B. S., Trevino, J. M., Christein, J. D., & Wilcox, C. M. (2013). Equal efficacy of endoscopic and surgical cystogastrostomy for pancreatic pseudocyst drainage in a randomized trial. *Gastroenterology*, 145(3), 583-590.

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