

Papilla Vater's Tumor in Elderly: an Interdisciplinary Issue

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ABSTRACT

Tumors of the papilla Vater are very rare. Papilla Vater's tumors are benign or malignant tumors in the ampulla of Vater and periampullary region. Blockage of ampulla leads to the development of obstructive jaundice; intermittent cholangitis, epigastric discomfort and weight loss. Treatment possibilities include endoscopic ampulectomy, surgical transduodenal excision of tumors of the ampulla and pancreatoduodenectomy (PDE). Prognosis depends on histological typing of the tumor and their clinical stage. We report a case of papilla Vater's tumor in elderly with comorbidities based on literature review.

A 68-year-old female patient was referred for evaluation of intra and extra hepatic bile duct dilatation noted on abdominal ultrasonography. She complained of intermittent epigastric and right upper abdominal pain, with yellowish skin for two months. The laboratory findings showed leukocytosis, hyperbilirubinemia, abnormal liver function test, and high Ca 19-9. An endoscopic retrograde cholangiopancreatography (ERCP) revealed a distal obstruction caused by papilla Vater's tumor. Abdominal computed tomography (CT) with contrast, revealed a dilated common bile duct and pancreatic duct. The histologic evaluation was highly suggestive for dysplasia. She is now on a schedule for a Whipple procedure.

To make a true diagnosis and optimal treatment of papilla Vater's tumor is multimodal. By doing a comprehensive geriatric assessment, with a careful modality selection, a Whipple procedure can be performed in elderly (65 years) safely. The post operative morbidity and mortality depends on their multi morbidity. Surgical, endoscopic, or radiologic biliary decompression; relief of gastric outlet obstruction; and adequate pain control may improve the quality of life but do not affect overall survival rate. By building a great interdisciplinary teamwork, the quality of life increased as follows.

Keywords: *papilla Vater tumor; elderly, Whipple procedure*

INTRODUCTION

Papilla Vater's tumors are benign or malignant tumors in the ampulla of Vater and periampullary region. These represent 1.5% of gastrointestinal (GI) tract tumors with incidence about 6 million/year.¹ Tumors of the papilla Vater are very rare; the majority of tumors of the minor papilla of the

duodenum are neuroendocrine tumors (NETs), such as somatostatinomas and carcinoid tumors. Carcinoid tumors arise from enterochromaffin cells, and gastrointestinal carcinoids are usually located in the appendix, ileum, stomach, and rectum; only 8 cases have been reported in the literature.²

Blockage of ampulla leads to the development of obstructive jaundice; intermittent cholangitis, epigastric discomfort and weight loss. Frequently the patient underwent an endoscopy, endosonography, contrast enhanced computed tomography (CT) and endoscopic retrograde cholangiopancreatography (ERCP).²

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Treatment possibilities include endoscopic ampulectomy, surgical transduodenal excision of tumors of the ampulla and pancreatoduodenectomy (PDE). Tumors arising from the papilla of Vater have a better prognosis than carcinomas of the pancreas and bile duct, and it has quite a different pathological nature from these tumors.³ Prognosis depends on histological typing of the tumor and their clinical stage and maybe associated with an excellent prognosis, and if the tumor is limited to the duodenal mucosa without any invasion into the adjacent pancreas then the five-year survival may be as high as 90%. Prognosis for patients with carcinoma of papilla Vater is better than other periampullary tumors. The overall survival after the Whipple operation for pancreatic adenocarcinoma is about 20 percent at five years after surgery. Patients without spread of cancer into their lymph nodes may have up to 40% survival.¹⁻³

CASE ILLUSTRATION

A 68-year-old female was referred to our department for evaluation of dilatation of the main pancreatic duct, intra and extra hepatic biliary duct, with a double duct sign, noted on abdominal ultrasonography (US). She complained of intermittent right upper quadrant and epigastric pain 2 months prior to admissions, followed by yellowish skin, and dark brown colored urine. She also complained about nausea, vomiting and low dietary intake during 2 weeks prior to referral. The patient had a history of hepatic abscess. She did not drink alcohol or smoking or any particular medications and denied sweating and diarrhea. Laboratory data on admission were as follows: total bilirubin 31.6 mg/dL, aspartate aminotransferase (AST) 97 U/L, alanine transaminase (ALT) 39 U/L, alkaline phosphatase (ALP) 1,014 U/L, and gamma glutamyl transpeptidase (GGT) 806 U/L. The complete blood count showed leukocytosis 12,100/mm³, neutrophil segment 85, and hypoalbuminemia 2.5 mg/dL. Serum electrolytes were within normal limits. On the fourth days of hospitalization, the patient underwent ERCP that showed a distal obstruction of the biliary duct. The CA 19-9 was 8,378 U/mL. On the CT scan, the pancreatic duct was diffusely dilated without a definite mass and the common bile duct was dilated.

The abdominal US revealed a dilatation at intra and extra hepatic biliary and common bile duct (CBD); sludge in gall bladder. There was no sign of pancreatic duct enlargement. The summary from this examination was enlargement of intra and extra hepatic biliary duct and CBD (figure 1). On the CT scan, the pancreatic duct was diffusely dilated without a definite mass and the common bile duct was slightly dilated, with a non specific hepatomegaly, and no sign of lymph nodes enlargement. Endoscopy showed papilla Vater's

prominent with a tumor, cholangiogram showed an enlargement of CBD, intra and extra hepatic duct. From pancreatogram, the main pancreatic duct (MPD) was nonvisualized. The conclusion for this ERCP was, there is a distal obstruction of CBD at causa papilla Vater's tumor (figure 2). Multiple deep biopsies taken from this nodule during ERCP. The pathologic findings revealed highly suggestive dysplasia duodenum mucosal. Under the diagnosis of a tumor of the papilla Vater, the patient underwent double pigtail 10 Fr stenting procedure at the CBD (figure 3).

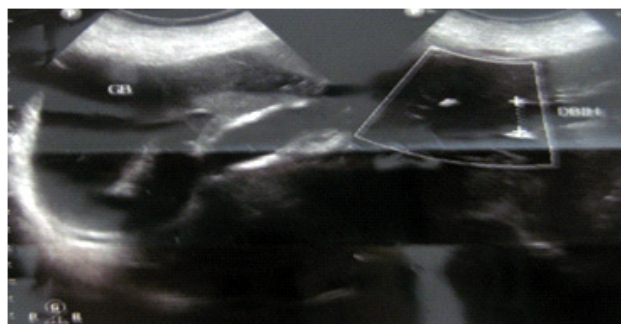


Figure 1. Abdominal ultrasonography showed enlargement of intra hepatic, extra hepatic and common bile duct

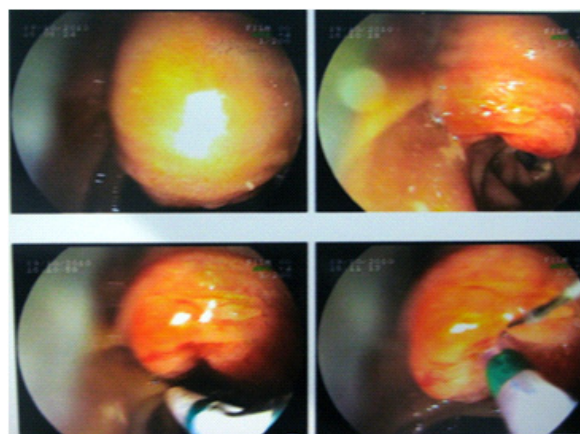


Figure 2. ERCP showed distal obstruction of CBD at causa papilla Vater's tumor

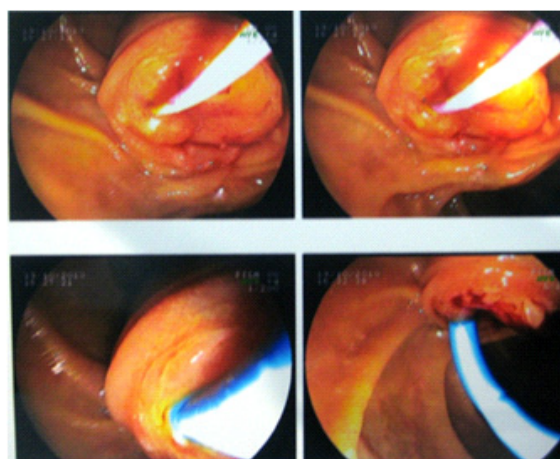


Figure 3. ERCP showed double pigtails stenting 10 Fr at common bile duct

DISCUSSION

A classical carcinoid tumor is usually still referred to as a carcinoid tumor. The incidence of gastrointestinal carcinoids is 1.6-2.0 cases per 100,000 persons/year, but the prevalence maybe higher.² Qiao et al reported ampullary carcinomas accounting for approximately 0.2% of all tumors in GI tract types can be found in this area originating from the duodenal mucosa or from the bile duct or the pancreatic duct.³ The etiology of the disease is poorly understood. Patients with familial adenomatous polyposis (FAP) have an increased risk of both benign and malignant papilla Vater's tumor. Most of these tumors are resectable for cure at diagnosis; however, the 5-years survival rate is only approximately 40-67% at best. Operative mortality rates have decreased significantly over the last decade because of increased surgical experience, improved anesthesia, better preoperative imaging and interdisciplinary pre and post operative management. Post operative mortality rates in our hospital are 20% and at the best centers are 1-2%. A higher rate of ampullary tumor is observed in male. Ampullary tumor or cancer most often seen in the fifth through the seventh decades of life.⁴ In this case, our patient is a 68 years old female.

The tumor or carcinoma of the ampulla of Vater is part of the spectrum of periampullary carcinomas, usually present with jaundice, and abdominal pain.^{1,2} Jaundice is the presenting symptom in 73% of resected patients and in 80% of unresected patients in the 28-year experience published by Talamini et al.⁴ Jaundice may intermittently wax and wane because of central necrosis and sloughing or pressure opening of an obstructed duct. Other clinical features include progressive weight loss in 61% cases, as seen in this case. Abdominal pain and back pain were present in 46% and it is usually dull, aching mid epigastric pain or right hypochondric pain, and back pain may be a sign of advanced stage. In this case, there is an abdominal pain and radiating back pain. At the third day of hospitalization, the patient was taking a nonsteroidal anti-inflammatory drugs to relieve the pain. There is a significant progress from the visual analog score, from 7 to 1. Pruritus associated with jaundice in 13-38% cases. Dyspepsia and vomiting may be present if compromise of the duodenal lumen leads to gastric outlet obstructions, and can contribute to loss of appetite. In this case, there is a dyspepsia and loss of appetite.⁴ At the first day of hospitalizations, with good collaborations with nutritionist, we give blenderized diet through nasogastric tube. Proton pump inhibitors and pro kinetic drugs were also be given to the patient. As we know there is an interaction between pain and dyspepsia, because of the pro inflammatory reactions that enhance tumor necrosis factor alpha

(TNF-alpha) due to local infections. Treatment for pain and dyspepsia has to commence at once.

From the laboratory studies, blood biochemistry, test for anemia caused by occult bleeding from the ampullary mass. Hyperbilirubinemia conjugated type, rise in serum ALT, AST, and alkaline phosphatase level due to blockage of the biliary outflow and biliary obstructions. As seen in this patient, we found there is a slight anemia, hyperbilirubinemia, rise in AST and ALT. Currently, no tumor marker is sensitive or specific enough to serve as a reliable screening tools for this case. Carbohydrate antigen (CA) 19-9 is the most studied and sensitive marker for pancreatobiliary neoplasms at present. In this case the CA 19-9 is 8,378 U/mL.

Abdominal US is the most useful noninvasive initial investigations for distinguishing medical from surgical causes of jaundice and we can identify dilated ducts, liver metastasis (in almost 90% cases), ascites and nodal metastasis. The level of obstruction can be assessed in 90% patient, as seen in this case. The limitation of abdominal ultrasound is the effectiveness related to the skill of the user, very superficial lesions and very deep lesions may be missed. Distinguishing a metastasis from a hemangioma may be difficult, sensitivity is 80-90%, and information is inferior to that obtained by CT scan or magnetic resonance imaging (MRI). Poor bowel preparation may obscure the important pathology. It has been found to be a diagnostic tools of ampulla of Vater carcinoma only in 23.8% cases. In this case, the cause of distal obstruction at CBD are not seen in this modalities. CT is a noninvasive procedure. CT scan is superior to US but inferior to endoscopic ultrasound (EUS) for tumor or carcinoma of the ampulla of Vater unless extensive tumor is present. CT scan is better in evaluating resectability and preoperative staging. It gives better assessment of invasion, encasement, or compression of vessels and adjacent organs. CT-guided biopsy may be obtained when mass lesions are present, but endoscopic biopsy is preferred. In this case, CT revealed an enlargement of CBD and no sign of mass or space occupying lesions in pancreas, metastasis and lymph nodes enlargement.

ERCP allows diagnostic and therapeutic access to both the common bile duct and pancreatic duct. The procedure displays the details of ductal anatomy and accurately demonstrates the level and nature of the obstruction. Anatomical variations in ducts can be evaluated carefully⁴. In this case, the side viewing endoscopy revealed the papilla Vater's tumor that cause the obstruction of distal CBD. ERCP allows therapeutic procedures, such as sphincterotomy, stenting, and nasobiliary drainage. In this case, stent double pigtailed was placed and it reveals a good progression for hyperbilirubinemia. Endoscopic

excision of small periampullary tumors is gaining in popularity. It permits sampling of pancreatic juice, bile, and brush/grasp biopsy. The ERCP disadvantage is an invasive procedure that requires an expert endoscopist or radiologist and a cooperative patient. Very small tumors (< 1 cm) can be missed. ERCP is not possible if access to the duodenal papilla is difficult to obtain because of diverticula, anatomical ductal variations, or prior surgical bypass.⁴

The surveillance epidemiology and end result (SEER) database indicates adenocarcinoma is the most frequently identified histology for papilla Vater's cancer. Adenocarcinoma not otherwise specific (NOS) was reported in 65% of cases. Carcinoma NOS was reported in 8.1%; adenocarcinoma arising from adenoma (adenocarcinoma in villous adenoma, in tubulovillous adenoma, in adenomatous polyp and villous adenocarcinoma) was third most common, reported in 7.5%. Other pathologic diagnosis reported included papillary adenocarcinoma (5.6%), mucinous adenocarcinoma (4.7%), and signet ring cell carcinoma (2%). In this case the specimen from papilla Vater's tumor was taken during ERCP. The conclusion from histologic finding is high grade dysplasia of duodenum mucosa.⁴

Surgical resection of an ampullary carcinoma is the primary modality of treatment. The highest cure rates are achieved if the tumor is localized to the ampullary region and complete resection is achieved. Diagnostic staging laparoscopy may be indicated to avoid laparotomy in the setting of advanced disease with distant occult metastasis. PDE Whipple is the standard procedure. Pylorus preserving PDE or classic Whipple can be performed depending on extent of tumor and surgeon preference. With improvement in interdisciplinary postoperative management and surgical technique, operative mortality rates are as low as 1% in experienced centers.⁵ Resectability rates for ampullary carcinoma was up to 96% in the 1990s.⁶ Local resection (ampullectomy) may be considered for patients with an ampullary adenoma with absence of dysplasia on preoperative biopsies who are inappropriate candidates for PDE. Recurrence rate is high in this population; therefore, surveillance endoscopy is indicated. Extensive preoperative assessment of cardiac, respiratory, renal, and cerebral functions should be performed in older patients or those with comorbid conditions. Toh et al reported 25 patients (13 male, 12 female) with a median age of 65 years who had an ampullary tumor. The resectability rate was 88%, with no operative mortality. The 5-years

survival rate of patients who underwent radical resection was 49%. They concluded that local resection is recommended only for small, benign tumors and for patients who may be unfit for radical surgery; otherwise, pylorus-preserving PDE is safe and the most effective procedure.⁷

Interdisciplinary management including: (1) Assessment of nutritional status and supplementation. Consultations with nutritionist to provide patient education regarding postgastrectomy diet; (2) Intravenous antibiotic prophylaxis; (3) Fluid and electrolyte correction; (4) Assessment of coagulation profile and correction of decreased prothrombin time by administration of vitamin K in patients with advanced jaundice; (5) Preoperative biliary drainage in jaundiced patients is indicated in patients with cholangitis and those with profound hyperbilirubinemia as this may impact coagulation status and wound healing. Preoperative stenting may be associated with increased postoperative infectious complications; (6) Standard treatment for dyspepsia and loss of appetite with a comprehensive management of pain; (7) Assessment of cardiac, renal, and pulmonary status; (8) Medical rehabilitations interventions usually, for patients experiencing pre or postoperative deconditioning, most commonly experienced postoperative complications or had preexisting conditions e.g. pain; (9) Assessment of the patient mental status and supportive psychotherapy especially for patient with adjustment disorders or depressions.

Carcinoid tumors of the papilla Vater's are very rarely found, but the true incidence might be much higher, and the tumors frequently have aggressive behavior. Carcinoid tumors of the papilla Vater's should be included in the differential diagnosis of recurrent abdominal pain, cholangitis or pancreatitis of unknown cause. By doing a comprehensive geriatric assessment, with a careful modality selection, this case can have a good prognostic future.

PDE is the treatment of choice not only for ampullary carcinoma but also for adenoma with high grade dysplasia also for elderly persons in good somatical status;¹ for frail unfit persons with distant metastases or miscellaneous contraindications for surgery remains endoscopic sphincterotomy and stenting a valid alternative of palliative treatment.

With good teamwork and interdisciplinary management with comprehensive geriatric assessment, the treatment or palliative care and quality of life can increase.

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