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Case Report

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Long-term results of pancreaticoduodenectomy and endoscopic resection in the treatment of early stage carcinoma of the ampulla of Vater: case series and review of the literature

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Abstract: We retrospectively evaluated 6 cases to explore the role of curative pancreaticoduodenectomy and endoscopic resection of ampulla of Vater tumors. Six patients diagnosed with stage 1 ampullary tumors at Ankara University Hospital between January 1994 and September 2009 were analyzed retrospectively. Icterus was the cardinal symptom in all patients. The median time for the symptoms caused by the lesion of the papilla was 7 weeks in patients with carcinoma. The diameters of the visualized tumors were less than 20 mm. Diabetes mellitus was observed in 2 patients. When the patients were classified according to TNM staging, all patients were in stage 1. Endoscopic resection was performed in 3 patients, and the other 3 patients underwent curative pancreaticoduodenectomy. The mean ages in the curative pancreaticoduodenectomy group and endoscopic resection group were 54.3 and 80.3 years, respectively. Tumor recurrence was not observed in any patient. Among the endoscopic resection group, there was no sign of tumor recurrence for 72 months in 1 patient, 6 months in another patient, and 46 months in the last patient. One of the patients died 46 weeks after endoscopic ampullectomy. This patient also had diabetes mellitus and cardiac problems. Radical pancreaticoduodenectomy is presently the most common method for resecting malignant ampullary tumors. Endoscopic resection of carcinoma of the ampulla of Vater appears to be an alternative to surgical therapy, particularly in patients for whom surgical approach carries a high risk.

Key words: Carcinoma, ampulla of Vater, endoscopic resection, pancreaticoduodenectomy

Introduction

Carcinoma of the papilla has a distinctive status among the periampullary carcinomas, as it carries a relatively favorable prognosis. Early and accurate diagnosis of carcinoma of the ampulla of Vater would lead to early treatment and, subsequently, a better prognosis (1). In stage 1, visualized tumors have diameters of less than 2 cm (2). The symptoms arising due to these tumors are nonspecific and not always evident (1). The most common presenting symptom is jaundice.

Optimal management of neoplastic diseases of the papilla of Vater is still controversial. Until recently, surgical resections or transduodenal local excisions were routinely performed in most centers as definitive treatments (3). Carcinoma of the papilla of Vater is usually localized at the time of diagnosis, and prolonged survival can be obtained by curative surgery. Therefore, an aggressive approach in such patients is reasonable (2-4). In recent years, endoscopic resection procedures have proven to be feasible and safe alternatives for neoplastic diseases of the papilla, but further controlled studies with long-term data are needed to evaluate preoperative staging accuracy and recurrence rates (3,5-7). Local resection is especially indicated for older patients with high risk or severe concurrent diseases. Close

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postoperative follow-up with duodenoscopy and endoscopic retrograde cholangiopancreatography (ERCP) is recommended (7,8).

Our aim was to evaluate retrospectively 6 cases of ampulla of Vater tumors at Ankara University Hospital and to establish the role of curative pancreaticoduodenectomy and endoscopic resection of the papilla in the long-term survival rate of patients.

Case reports

Six patients diagnosed with stage 1 ampulla of Vater tumors at Ankara University Hospital between January 1994 and September 2009 were analyzed retrospectively. The surgical techniques for managing ampullary cancer include pancreaticoduodenectomy. Surgery in ampulla of Vater cancer without distant metastasis is indicated by preoperative evaluation of computed tomography (CT) images of the abdomen and pelvis. Endoscopic resection of the papilla includes removal of the intraduodenal roof and removal of the intraluminal common orifice of the papilla (Figures 1a-1c).

Tumor size and differentiation, venous invasion, and lymph node status were assessed. Tumor infiltration depths (T stage) of ampullary cancer were recorded according to the sixth edition of the American Joint Committee on Cancer staging system (9): pTis, carcinoma in situ; pT1, tumor limited to the ampulla of Vater or the sphincter of Oddi; pT2, tumor invading the duodenal wall; pT3, tumor invading the pancreas; and pT4, tumor invading peripancreatic soft tissues or other adjacent organs.

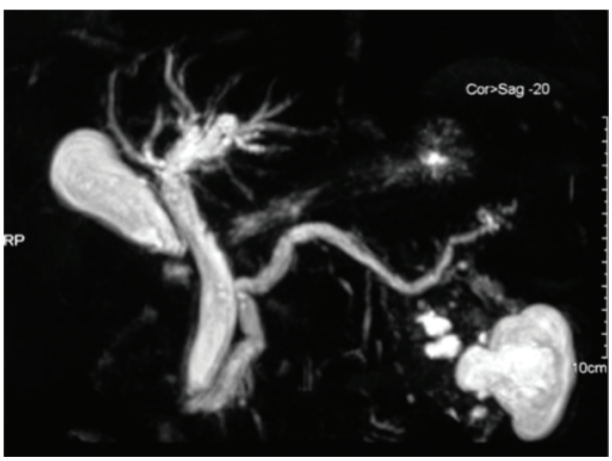

Figure 1a. Both choledoch and pancreatic canal terminate enlarged at the level of ampulla in the MRCP image.

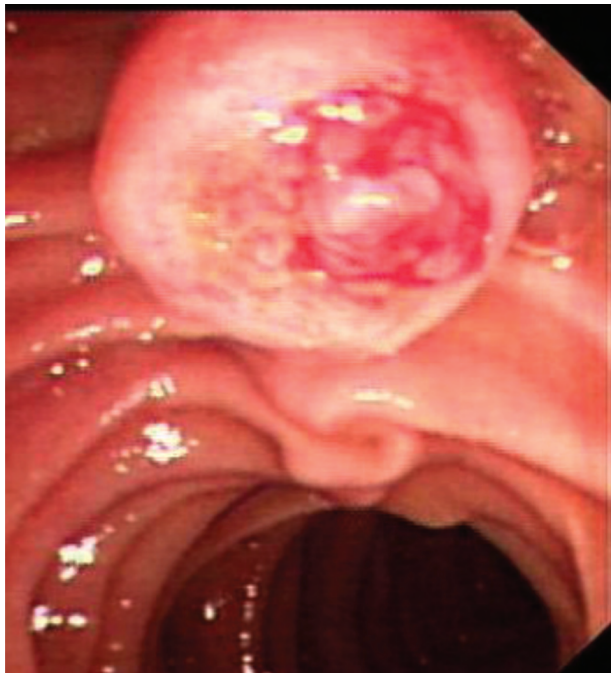

Figure 1b. The protruding papilla is observed in ERCP.

Figure 1c. Endoscopic resection of tumors of the ampulla of Vater.

After curative resection for ampulla of Vater neoplasms, all patients underwent 2 to 8 follow-up examinations including routine CT scans. Survival was calculated in months from the date of the diagnosis until last follow-up attendance or death.

We reviewed the medical records of 6 patients. The median time for patient symptoms caused by the lesion of the papilla was 7 weeks in patients with carcinoma. Clinical manifestations in patients with carcinoma (n = 6) were as follows: epigastric pain in 1; jaundice in 6; and weight loss in 2. Diabetes mellitus was observed in 2 patients with carcinoma. All of the patients were admitted with a main complaint of jaundice. Icterus was the cardinal symptom in all patients. The tumors were visualized with diameters of less than 20 mm. Dilation in the bile duct was demonstrated in all patients who underwent ultrasound or CT scan. Endoscopic imaging discovered the tumor in all cases; however, biopsy had a diagnostic value in only 5 patients.

There was no lymph node metastasis in any patient. When the patients were classified according to pTNM staging, all patients were in stage 1. Three patients underwent curative pancreaticoduodenectomy. Surgical ampullectomy was not performed in any of the patients. Three patients underwent endoscopic resection; 2 of the patients were male and 1 was female. The mean age in the curative pancreaticoduodenectomy group was 54.3 years, ranging from 52 to 57 years. In the endoscopic resection group, the mean age was 80.3 years, ranging from 67 to 96 years. Tumor recurrence and hospital mortality were not observed in either patient group. In November 2009, 5 of the 6 patients were alive. In the pancreaticoduodenectomy group, the patients were followed for 12 to 132 months. Among the endoscopic resection group, there were not any signs of tumor recurrence for 72 months in 1 patient, for 6 months in another patient, and for 46 months in the final patient. Because of the high rate of comorbidities and the advanced age of some of the patients (3 of the 6 were older than 70 years), additional radical surgical procedures were not performed on these 3 patients. One of the patients died 46 weeks after endoscopic ampullectomy. This patient also had diabetes mellitus and cardiac problems.

Discussion

Carcinoma of the ampulla of Vater is rare. The symptoms of these tumors are usually nonspecific (1). The most common presenting symptoms are jaundice and abdominal pain. In this study, all of the patients were admitted with a main complaint of jaundice. ERCP with biopsy is a minimally invasive technique used to visualize these tumors directly and to evaluate their histological characteristics. Histological examination of samples obtained via forceps biopsies reveals malignancy in only 60% of cases. When a snare biopsy is used, the diagnostic yield increases to 83% (2,10). All of our patients were diagnosed by ERCP.

These tumors are clinically important and early identification, appropriate staging, and proper treatment are essential for a better prognosis (1,2). These tumors are usually visualized with a diameter of less than 2 cm (5). Factors having prognostic value for survival rate are the stage of disease, metastatic regional spread, tumor invasion in the head of the pancreas, and the microscopic appearance of pancreatitis in the acute phase of the condition (11,12). Tumors of the ampulla of Vater have a favorable prognosis. The facts responsible for this in the majority of cases are the early appearance of symptoms due to proximity to the common bile duct and restriction of the metastases to the lymphatic nodes (1,2,10,13). In our study, the tumors were restricted within the papilla in all of the patients. There were no lymph node metastases or distant metastases. Tumor diameters were less than 2 cm.

There is no consensus yet regarding the optimal management of neoplastic diseases of the papilla of Vater. Curative treatment may be performed endoscopically or surgically (1,3,8). Radical resection for ampullary carcinoma remains the procedure of first choice in these patients (6). Carcinoma of the papilla of Vater is usually localized at the time of diagnosis, and prolonged survival can be obtained by pancreaticoduodenectomy, especially when no nodal or distant metastases are present at the time of surgery. An aggressive approach, therefore, is reasonable in such patients (8,14-16). Pancreaticoduodenectomy has the advantage of a low recurrence rate with low perioperative mortality (0%-3%) and an acceptable survival rate (15%-25%) (13,17). Local

surgical excision (surgical ampullectomy) has the advantage of lower morbidity (0%-25%), but also has higher recurrence rates and requires postoperative endoscopic surveillance (17-19).

In recent years, endoscopic resection procedures have proven to be feasible and safe alternatives for the treatment of neoplastic diseases of the papilla, but further controlled studies with long-term data are required to evaluate the accuracy of preoperative staging and recurrence rates (3,5,6). Endoscopic papillectomy is effective and safe in experienced hands, usually producing little morbidity and virtually no mortality (20). In unresectable cases, endoscopic palliation can increase the survival rate (21). Local resection is especially indicated for elderly patients with high risk or severe concomitant diseases (2,7,22,23). Snare ampullectomy is a novel endoscopic excisional technique for which limited data are available; its advantages when compared with radical surgery are apparent lower mortality (0%-1%) and morbidity (12%) rates (24). Local resection has a high rate of recurrence (5%- 30%) and requires postoperative endoscopic surveillance. For this reason, it is not considered the first choice for management of ampullary tumors (20). In patients who are not candidates for curative treatment, palliative treatment through drainage can be performed, preferably via endoscopy (1,16,18).

We preferred endoscopic resection in elderly patients with comorbidities. Of the 6 patients involved in the study, 5 were alive as of November 2009. One patient died after endoscopic ampullectomy. This patient had comorbid diseases. Recurrence was not observed in any of the patients after either pancreaticoduodenectomy or endoscopic resection.

Radical pancreaticoduodenectomy is presently the most common method for resecting malignant ampullary tumors. Endoscopic resection of carcinoma of the ampulla of Vater appears to be a viable alternative to surgical therapy, particularly in patients for whom surgical approach carries a high risk.

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