

Carcinoma of Ampulla of Vater and Recurrent Desmoid Tumors in Gardner's Syndrome : A Case Report

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Abstract

Gardner's syndrome is characterized by colonic polyps, osteomas of the skull and the mandible, and soft tissue tumors. Patients with this syndrome can also develop extracolonic manifestations such as periampullary tumors and desmoid tumor of the abdomen. We report a 36 year-old female with Gardner's syndrome and recurrent desmoid tumors of the abdomen, presenting with fever and malaise for 2 days. Upper gastrointestinal endoscopy for marked anemia showed a bleeding polypoid tumor in the ampulla of Vater. Histopathology yielded a tubular adenoma with focal carcinomatous change. Obstructive jaundice developed later and biliary drainage was carried out. Surgery for the ampullary tumor was advised but the patient refused. The patient improved and was discharged after 25 days of hospitalization but she was reported to die one year later. (J Intern Med Taiwan 2008; 19: 158- 163)

Key Words : Familial adenomatous polyposis, Gardner's syndrome, Periampullary cancer, Desmoid tumor, Colorectal polyp

Introduction

Familial adenomatous polyposis (FAP) is a condition characterized by the development of multiple adenomatous polyps of the colon, with a propensity for malignant degeneration. It is inherited as an auto-

somal dominant trait with the affected gene, adenomatous polyposis coli (APC) tumor suppressor gene, located at the 5q21 locus¹. The classic prototypes of these polyposis syndromes include familial polyposis coli (FPC) and Gardner's syndrome (GS).

Gardner and Richards in 1953 described the as-

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sociation of colonic polyps, osteomas of the skull and the mandible, and soft tissue tumors such as epidermoid cysts after studying seven family members². This was later known as GS. Since then, numerous extracolonic manifestations were reported. As the number of reported patients with FPC/GS increased, the high risk of development of periampullary malignancy was recognized³. We present a case of GS with stigmata associated with carcinoma of the ampulla of Vater and recurrent desmoid tumors.

Case report

A 36-year-old female was admitted to our institution in August, 1995 because of weakness and fever with chills for 2 days. At the age of 20, she had an excision of a benign subcutaneous tumor over the lower back. Three years later, she was readmitted to our hospital because of toxemia of pregnancy, which

resulted in cesarean section. During operation, multiple abdominal wall tumors were found, with the largest measuring about 20 cm X 15 cm in size. Rush frozen section revealed a histiocytoma. Excision of the largest tumor was performed. Focal fibrosis was also noted over the mesentery of the distal ileum. There were osteomas over the mandible (Fig. 1), the long bones of the extremities and left upper chest wall. The scalp also revealed multiple mobile, nontender soft tissue masses. Colonoscopy showed multiple colon polyps measuring 0.2 cm to 1 cm in size and was scattered all over the rectum up to the ascending colon and distal ileum. Fulguration was performed and pathology was consistent with adenomatous polyps. Upper gastrointestinal (GI) endoscopy performed later revealed multiple polyps in the gastric fundus and antrum, as well as the second portion of the duodenum. Histologic examination of the latter showed mild dysplasia. Four years prior to this admission, the patient underwent excision of a large desmoid tumor over the abdominal wall, measuring about 20 cm X 18 cm in diameter. Colectomy was advised, but the patient refused. So, colonoscopy was then performed every 6 months, and polypectomy was done every time. Family history disclosed that her mother died of colon cancer. On physical examination, the patient was poorly nourished with a prominent scoliosis. She was febrile with a temperature of 38.4 °C, tachycardic at 131/min, and hypotensive with a blood pressure of 98/64 mmHg. Her conjunctivae was pale and multiple scalp tumors as well as a right eyelid soft tissue tumor were palpable. Abdominal examination revealed multiple well-defined abdominal wall masses of varying sizes and multiple surgical scars. The lower back had a surgical scar 5 cm in length. Laboratory examination showed a white cell count of 18200/ μ L, hemoglobin of 3.9 g/dL and platelet count was 403000/ μ L. AST was 64 U/L (normal 10-35 U/L), ALT 80 U/L (0-40 U/L), alkaline phosphatase 402 U/L (66-240 U/L), total bilirubin 1.1 mg/dL (0.2-1.0 mg/dL), and albu-



Fig.1. Roentgenogram of the skull showing multiple osteomas (arrow) over the mandible.

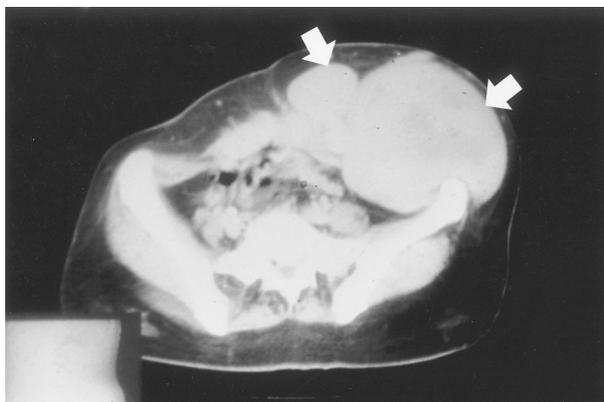


Fig.2. Contrast-enhanced computed tomographic scan of the abdomen revealing two well-defined masses (arrow) in the left abdominal wall.

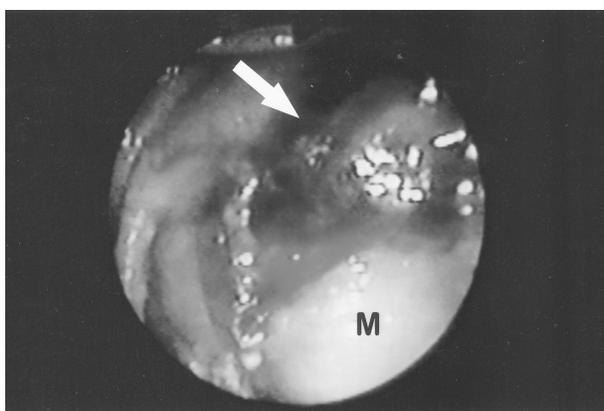


Fig.3. Endoscopic photograph showing a tumor mass (M) in the second portion of the duodenum with bleeding (arrow).

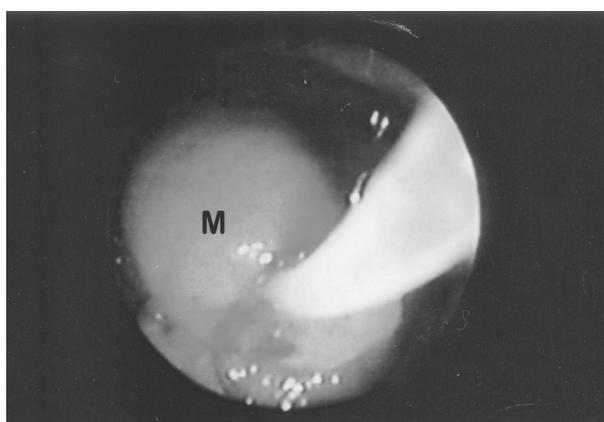


Fig.4. Endoscopic photograph showing a large tumor mass (M) over the ampulla of Vater with a catheter inserting into the papillary orifice.

min 2.8 g/dL (3.5-5.0 g/dL). Computed tomographic scans of the abdomen showed multiple masses in the abdominal wall (Fig. 2). Stool occult blood was

positive. An upper GI endoscopy revealed multiple polyps in the gastric fundus, the anterior wall of the gastric antrum and the second portion of the duodenum. There was also a large tumor mass with bleeding at the ampulla of Vater (Fig. 3). Endoscopic biopsies of the ampullary tumor showed tubular adenoma with focal adenocarcinoma. The patient later became jaundiced and an abdominal ultrasound showed a markedly dilated common bile duct 1.6 cm in diameter, dilated bilateral intrahepatic ducts, and a distended gall bladder. Total bilirubin was elevated at 8.6 mg/dL. Duodenoscopy showed a polypoid mass measuring 3 cm in diameter at the ampulla of Vater (Fig. 4). Endoscopic biliary drainage was achieved through plastic stent placement, but drained poorly. The patient went into shock the next day. Percutaneous transhepatic biliary drainage was performed and the patient was stabilized after combining treatment with parenteral antibiotics. Whipple's procedure was suggested, but the patient refused. She was discharged improved after 25 days of hospitalization. However, she died one year later at another hospital.

Discussion

GS is a rare entity and is a variant of FAP with various extracolonic manifestations, which include osteomas involving the maxilla, the mandible, long bones, cranial bones and the sinuses, epidermoid cysts, lipomas, fibromas, dental anomalies like impacted and supernumerary teeth, desmoid tumors, central nervous system tumors, thyroid gland adenomas and carcinomas, adrenal gland adenomas and carcinomas, upper gastrointestinal polyps, duodenal, pancreatic, liver and biliary neoplasms, carcinoid of the small bowel, lymphoid hyperplasia of the terminal ileum and congenital hypertrophy of the retinal pigment epithelium²⁻⁹. The characteristic finding in patients with these polyposis syndromes is the development of multiple colorectal adenomatous polyps, which usually appear in the second or third decade of life. If untreated, colorectal cancer will de-

velop in almost 100% of these patients. A total proctocolectomy with ileostomy or a colectomy with ileorectal anastomosis is the recommended surgical therapy. Adenomatous polyps may occur anywhere in the gastrointestinal tract except the esophagus. There is a high prevalence of adenomas in the duodenum, mostly located at the periampullary area, in patients with FAP/GS¹⁰. The cause of these tumors remains controversial. Individuals with GS have a 100- to 200-fold risk of developing periampullary carcinoma compared to the general population¹¹. In 1935, Cabot described the first case of GS associated with a cancer of the ampulla of Vater⁴. Treatment for ampullary carcinoma in GS can sometimes be a dilemma. The choice of a Whipple's procedure has to be weighed according to the patient's lesions. For good operative risk patients, a radical pancreaticoduodenectomy is the treatment of choice. However, when preoperative evaluation reveals local or distant metastases or when a patient is not an operative candidate because of serious medical condition, nonoperative palliative therapy should be considered.

Desmoid tumors or fibromatoses, arising from musculoaponeurotic soft tissues throughout the body, are benign but locally invasive neoplasms with no potential for metastasis. They usually develop in the abdominal wall and the mesentery. These tumors are composed of mature fibroblasts and have no true capsule histologically. Desmoid tumors can be classified as a superficial form, which include Dupuytren's contracture and Peyronie's disease, and a deep form, which include extraabdominal, abdominal wall, and intraabdominal desmoids¹². Desmoid tumors behave differently, and sometimes grow rapidly. The increased prevalence of desmoid tumor in FAP, together with clustering within families and the mutations within the APC gene in desmoid tumor cells, makes a genetic etiology highly probable. The incidence of desmoid tumors in patients with FPC is about 3.5%, while desmoid tumors occur in patients with GS in about 17.3-29%, versus only 0.03% in the general

population¹³⁻¹⁵. Surgery is the treatment of choice for these lesions. However, irradiation¹⁶, nonsteroidal anti-inflammatory drugs¹⁷, antiestrogens¹⁸, cytotoxic agents¹⁹ and interferon α ²⁰ have also been reported in literature with varying successes. There is no known prevention for their occurrence and an optimal therapeutic modality has not been established.

There are only 3 reported cases of GS with stigmata associated with periampullary cancer and desmoid tumors in the English literature²¹⁻²³. In these cases, the desmoid tumors involved the abdominal wall^{21,22}, mesentery^{21,23} and scapular area²¹. To our knowledge, this is only the 4th case of the aforementioned syndrome. Ours is different from the previous 3 cases in that, the size of the desmoid tumor was larger and the tumors were recurrent and multiple. Prophylactic colectomy has prolonged the lives of patients with FPC/GS. However, with prolonged survival, came an increase in the occurrence of extracolonic malignancies. Major causes of death in patients undergoing the prophylactic operation were desmoid tumors and periampullary malignancy²⁴. Periodic surveillance using abdominal imaging and upper GI endoscopy is recommended.

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Gardner's 症候群合併壺腹部癌 及反覆性腹部纖維瘤：一病例報告

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摘 要

Gardner's 症候群乃具有大腸息肉、顱骨及下顎骨之骨瘤、軟組織腫瘤等特徵，也會引起一些大腸外之臨床症狀，特別是壺腹部周圍之腫瘤及腹部纖維瘤。我們報告一例36歲女性患者，有Gardner's 症候群及反覆性腹部纖維瘤之病史，以兩天發燒及全身倦怠表現。因嚴重貧血，故接受胃鏡檢查，於胃鏡檢查時意外發現在十二指腸乳頭處有一息肉樣之腫瘤合併出血，經由內視鏡切片檢查發現為一腺瘤有局部惡性變化。之後黃疸發生，接受疸汁引流術。但病人不願接受壺腹部腫瘤切除手術。在住院第25天出院。然而出院後未回診，據說一年後在其他醫院因病去世。