

MALIGNANT DUODENOCOLIC FISTULA- CASE REPORT OF A RARE COMPLICATION OF COLONIC CANCER TREATED BY MULTIVISCERAL RESECTION

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Abstract

Duodenocolic fistulas created by invasive cancer of the colon are rare complications. They are presented with serious electrolytic and nutritional disturbances due to vomiting, diarrhoea, abdominal pain, GI bleeding, and weight loss.

In this paper, we present young male patient with malignant duodenocolic fistula between ascendant colon and D2 portion of duodenum and pancreatic head, treated with right hemicolectomy and pancreaticoduodenectomy. Postoperative histopathology confirmed poorly differentiated colonic adenocarcinoma without spreading to lymph nodes and major vessels.

Patient is still alive after three years of the operation which led as to conclusion that this type of radical operation may represent one of the best treatments for this rare complication, provides good quality of life and is prognostically justifiable.

Keywords: malignant duodenocolic fistula, advanced colorectal carcinoma (CRC), right hemicolectomy, pancreaticoduodenectomy.

Introduction

Malignant duodenocolic fistulas are the most rare and evolutive complication of colonic cancer due to their rapid nutritional disturbances and difficult surgical management. The anatomic relationship between hepatic flexure and transverse colon on one hand and the second and third parts of duodenum on the other, allows simultaneous neoplastic involvement of both organs. The incidence of malignant duodenocolic fistulas has been estimated to be 0.14% in locally advanced colonic cancer [1].

It can be presented with diarrhoea, weight loss, abdominal pain, vomiting and lower GI bleeding and if the tumor is encompassable by resection, one-stage resection offers both the hope of cure and palliation [2].

We present young male patient with symptoms of malignant duodenocolic fistula (anorexia, abdominal pain, vomiting, upper GI bleeding), secondary to locally advanced colonic cancer and outlines the challenges of management to such lesions which differ markedly from uncomplicated colonic carcinomas.

Case presentation

The patient in this case report is a 48-year-old man, who was initially admitted to the Department of Gastroenterohepatology in our hospital, because of progressive weight loss, abdominal pain, persistent vomiting and a pronounced anemic syndrome. During the month before the admission, the patient gave information that he often vomited dark contents and on several occasions he had melaena, for which he was transfused with RBC derivatives in his local healthcare institution.

Clinical examination revealed anorexic, pale and chronically ill patient without significant clinical evidence of organomegaly or ascites on abdominal examination. Digital rectal examination was unremarkable. The rest of systemic review was normal. Baseline investigations and blood analysis (including serum markers CEA and Ca19-9 and coagulation profile), indicate anemia, with low levels of RBC and Hgb.

On the day of admission, a gastroduodenoscopy was performed. It surfaced a neoinfiltrative and exulcerated mass on the D2 portion of the duodenum, which circularly affects the duodenum with a central fistulous communication with the large intestine (air bubbles and fecal content present). A biopsy material was taken from the same infiltrative mass, which according to pathohistological analysis corresponds to adenocarcinoma with probable origin from pancreatic tissue. Ultrasound of the abdomen shows minimal presence of interintestinal fluid, with normal appearance of the other abdominal content.

Computed tomography (CT) scan was also performed, with an inconclusive finding regarding the origin of the infiltrative mass because the pancreatic head was covered by distended intestinal loops. The stomach was voluminous, expanded in the region of the body, pylorus and antrum. In the projection of the duodenum, was presented a large heterodense hypodense mass with circular irregularly thickened wall, visible free air around and abdominal fluid. Because of the overall findings and the hemorrhagic component of the infiltrative process, the patient was transferred to the Department of Digestive Surgery for operative treatment.

After thorough preoperative management with adequate hydration, RBC transfusions and total parenteral nutrition, the patient was subjected to exploratory laparotomy. At operation, a huge conjoined mass was seen at the medial part of ascendant colon found to be infiltrating the second part of the duodenum and pancreatic head. Given that the tumor does not infiltrate the SMA, SMV and v. cava, a right hemicolectomy with pancreaticoduodenectomy was performed, following typical anastomoses for Whipple procedure (Figure 1-A and B).

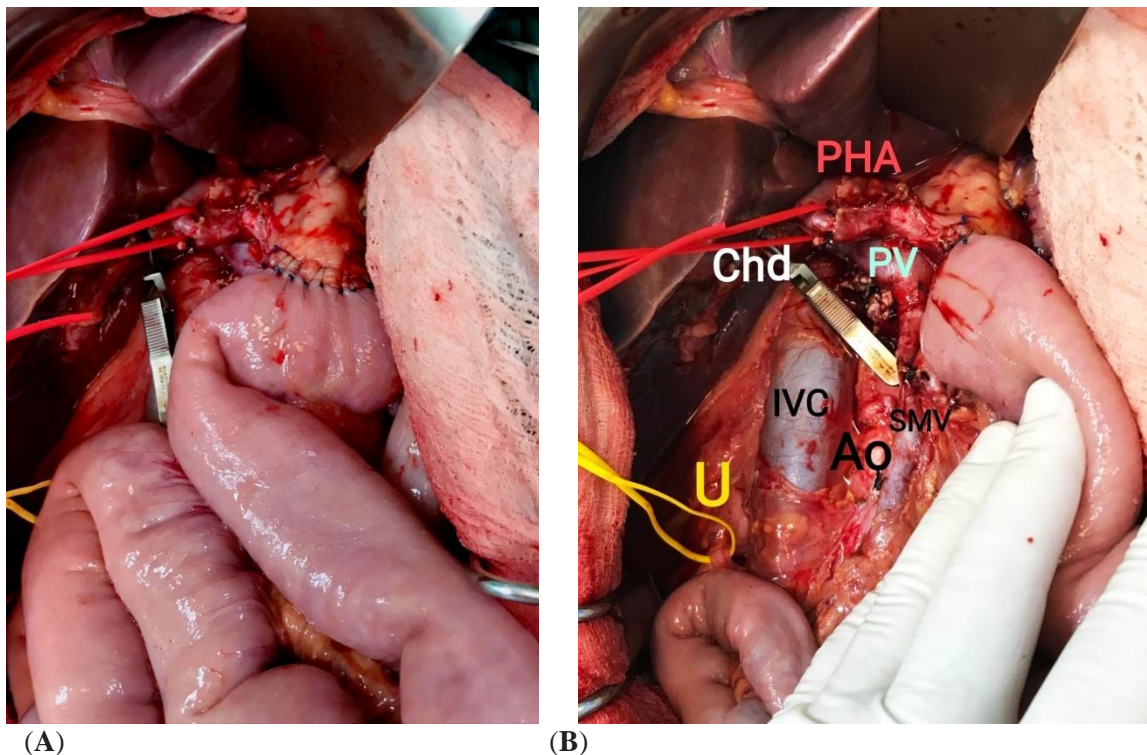


Figure 1. Peri-operative images showing (A)Pancreaticojejunal anastomosis (B) Operative field after multivisceral resection (PHA- proper hepatic artery; Chd-common hepatic duct; U-urether; IVC- inferior vena cava; PV-portal vein; Ao- aorta; SMV- superior mesenteric vein)

Histopathology of the specimen confirmed a grade II-C poorly differentiated adenocarcinoma of the colon with direct invasion of duodenum and pancreatic head. None of the isolated lymph nodes were positive for metastatic carcinoma and all resection margins were free of tumor as well, which correspond to Dukes stage B.

Postoperatively patient underwent an eventfull recovery with the expected establishment of nutrition and bowel passage, without any complications. The patient was discharged on the 10th post operative day with a plan for chemotherapy as per protocol.

Discussion

The incidence of colorectal cancer (CRC) is escalating worldwide[3] and there is corresponding rise in cancer-related complications [4].

One of the rare complications of locally advanced CRC is malignant duodenocolic fistula. It is unusual for colon cancers to invade the duodenum to such an extent that a malignant fistula is created. The first case report of a malignant duodenocolic fistula was reported by Haldane in 1862 in the Edinburgh Medical Journal [5]. However, in the literature reports of malignant duodenocolic fistulas are sporadic and usually due to their rarity are reported as a single cases. Most of them are secondary to a colonic primary than an other upper gastrointestinal malignancy.

The biggest series was reported in 1951 by Hershenson [6] in which a large series of duodenocolic fistulae was reported. In 8100 autopsies only one case was reported as malignant fistula. One report from 1977 by Welch [7], estimated the incidence of duodenocolic fistulas in USA to be 1 in 900 CRC cases.

Patients with malignant duodenocolic fistulas are present with symptoms from the primary tumour, from the fistula or from metastatic disease [8].

Persistent or alternating diarrhoea and feculent vomiting are attributed to: 1. Regurgitation of the colonic contents into duodenum and producing bacterial enteritis; 2. Shunting of the small intestinal contents into the colon and irritating effects on colonic mucosa from the duodenal unconjugated bile acids and hydrochloric acid [9].

This led to malabsorptive state which can result with dramatic weight loss and sometimes gastrointestinal bleed. Abdominal pain usually is in upper parts of the abdomen and at least 20% of the patients can presented with abdominal masses [10].

Imaging like abdominal ultrasound and double contrast CT scan may delineate the fistulous track and identify the primary tumour. CT scanning also is providing information about metastatic spread and extent of local invasion of the tumour. Colonoscopic and gastroduodenoscopic biopsies, when positive, confirm the malignant nature of the lesion.

Treatment of malignant duodenocolic fistula due to advanced colonic cancer depends on general condition of patient, extent of local invasion and metastatic status. Preoperative optimization is necessary and requires correction of dehydration, anemia, hypoproteinemia, negative nitrogen balance, vitamin deficiencies and electrolyte imbalance. Total parenteral nutrition would certainly be of value in restoring an adequate preoperative nutritional state.

In primary CRC surgical therapy is considered to be standard curative treatment for malignant duodenocolic fistula. The complexity of the pancreatoduodenal area makes the operative approach challenging [9].

There are various curative operations reported, all of which include a right hemicolectomy. The other part of the operation is 1. partial duodenectomy and primary closure of duodenal wall defect or the use of jejunal loop which have been proposed as a surgical procedures with curative intent [11,12]; or 2. Pancreaticoduodenectomy- procedure which has resulted in the highest one-year survival rate which may be due to en bloc excision of the tumour and fistula as well as sufficient dissection of the regional lymph nodes.

Vieta et al. [13] in their study shown that 46% of their cases survived at least 2.5 yrs after right hemicolectomy with pancreaticoduodenectomy with longest survivor reported alive 26 yrs after the operation. In Japan, Izumi examined 34 cases of malignant duodenocolic fistula treated by en bloc pancreaticoduodenectomy and reported their survival rate of 7 days to 4 years (median=10 months) [14].

For incurable and metastatic malignant duodenocolic fistula, a bypass procedure of ileotransverse anastomosis with gastrojejunostomy offers a reasonable palliative surgical modality.

In our case, this young patient was presented with symptoms from his primary tumour and his fistula, with GI bleeding, anorexia, diarrhoea and abdominal pain. He required vigorous rehydration, parenteral nutrition and blood transfusion. The tumour mass was confirmed with CT scan and malignant nature was confirmed with biopsy after gastroduodenoscopy. We decided to perform en bloc excision due to extent of the tumour from right colon to duodenum and pancreatic head without local invasion of major blood vessels. According the information until the submission of this paper, three years after operation our patient is still alive.

Conclusion

Early detection of CRC by CT scan, colonoscopy and various screening tools carries the best chance in preventing the development of complications. Correction of fluid and electrolyte balance,

total parenteral nutrition, nasogastric decompression and bowel preparation are mandatory preoperative measures. In the absence of disseminated disease malignant duodenocolic fistulas from colonic primaries can be treated by curative surgery that offers good prognosis [15]. We believe that en bloc surgical resection and reconstruction are reasonable goals in properly selected cases and afford the best clinical outcome for the patient.

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