CASE REPORT

When a colonoscopy becomes a duodenoscopy: a palliative treatment of a malignant sigmoidoduodenal fistula

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SUMMARY

We report a case of a 63-year-old female patient suffering from cachexy, anaemia and intractable chronic diarrhoea. As an underlying disease, we found a malignant sigmoidoduodenal fistula of a primary adenocarcinoma of the sigma which represents a rare complication of a frequent disease. Despite the theoretical need for a pancreaticoduodenectomy, only a multivisceral en-bloc resection of the small intestine and left adnexa was performed because of bad general and nutritional condition; this case illustrates a successful multimodal treatment with a palliative intention of a locally advanced colon cancer to alleviate clinical symptoms. The further decourse with the fast development of hepatic metastases confirmed this decision.

BACKGROUND

Most frequently, coloduodenal fistulas are described in the context of an inflammatory bowel disease such as Morbus Crohn, peptic ulcer disease or tuberculosis. Malignancies such as pancreatic cancer, lymphoma or an adenocarcinoma of the colon are rare aetiologies of a coloduodenal breakthrough.^{1 2} Coloduodenal fistulas because of a malignant process usually arise from the right or transverse colon. Malignant sigmoidoduodenal fistulas are hardly described. However, the sigmoid colon is one of the most frequent locations of colon cancers that invade neighbouring organs and requires multivisceral resection.³ This case illustrates a rare complication of a common disease.

CASE PRESENTATION

A 63-year-old woman was admitted to the hospital in a reduced general condition with significant weight loss and diarrhoea. The patient complained about the changes of stool frequency and consistency ('sometimes liquid and soft, sometimes rather solid') with chronic diarrhoea for the past 3 years.

Clinically, the patient presented herself with hypotension (73/47 mm Hg), tachycardia (106 bpm), anaemia and bacteraemia with *Escherichia coli*. Furthermore, bilateral leg oedema was found in the clinical examination. However, the patient had no abdominal pain. Whole blood analysis revealed a severe anaemia with a haemoglobin level of 59 g/l and severe malnutrition with an albumin of 17 g/l.

INVESTIGATIONS

A colonoscopy was performed in which a sigmoidoduodenal fistula was found (figure 1). In an abdominal CT scan, the sigmoidoduodenal fistula

in the middle of a large tumorous mass could be confirmed (figure 2). No evident metastasis could be revealed in the CT scan, a finding that was confirmed intraoperatively. Additionally, bilateral pulmonary emboli were diagnosed during the patient's work-up.

DIFFERENTIAL DIAGNOSIS

The presented clinical syndrome with cachexy, anaemia and intractable chronic diarrhoea raises the clinical suspicion of a malignant or a granulomatous disease (eg, Morbus Crohn, tuberculosis) leading to a coloduodenal fistula.

TREATMENT

After admission, blood transfusions, fluids and antibiotics were given. Owing to the clinical suspicion of an ongoing intra-abdominal sepsis, antibiotic treatment was started. Repeatedly taken blood cultures were positive for *E coli*. Pulmonary embolism was perioperatively treated with intravenous heparin; during follow-up, oral anticoagulation with coumarin replaced the heparin treatment.

At the interdisciplinary tumour conference, a neoadjuvant therapy concept had been rejected because of the poor general condition and the patient was referred to the surgical unit for the resection of the tumour. The patient was classified as ASA III after first-line therapy. However, according to the Karnofsky scoring system, the patient did not reach more than a value of 20% which is known to be an independent negative predictive factor for the survival of patients with advanced colon cancer.^{4 5}

Figure 1 The patient's colonoscopy, view from the sigmoid colon (triangles): view into the two branches of the duodenum (stars).

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Figure 2 Coronary reconstruction of the patient's abdominal CT scan: the sigmoidoduodenal fistula itself is indicated by a red line, the fistula is indicated with two red arrows and the sigma marked with a green line (reprinted with kind permission of the Department of Radiology at the University Hospital of Basel).

Intraoperatively, an infiltration of the duodenum, the left adnexa and the ileum was found. Owing to the advanced stage of the disease and the macroscopical tumour spread on the aortic and pelvic wall, a radical en-bloc resection of the sigmoid colon, the left adnexa and the infiltrated ileum as well as a local excision of the duodenum was performed. The duodenal infiltration was excised by performing a wedge resection to minimise the number of anastomoses as far as possible. Therefore, we did not proceed to a pancreaticoduodenectomy. Finally, a Hartmann's situation was created and the sigmoidoduodenal fistula was locally excised because of macroscopically present tumour on the aortic and the pelvic wall. The reported procedure consisted only of one stapled jejunojunal anastomosis and a minor suture of the duodenum and was performed as palliative treatment to alleviate clinical symptoms.

OUTCOME AND FOLLOW-UP

The postoperative course was without complications. The patient was transferred to a rehabilitation centre 2 weeks post-operatively and a combined palliative radiochemotherapy was planned according to the decision of the interdisciplinary tumour conference. However, the start of the palliative chemotherapy was delayed owing to the patient's initial refusal. Finally, the patient received palliative local radiotherapy (54 Gy) about 4 weeks later which was followed by several cycles of chemotherapy (FOLFIRI/ERBITUX).

DISCUSSION

Coloduodenal fistulas are mostly benign in nature (eg, Morbus Crohn and peptic ulcer disease). Anatomically, they are often close to the ascending and transverse colon. In a case series, a complete resection of malignant coloduodenal fistula was not always feasible.¹ The recurrence rate for right colon cancers

invading the duodenum without metastasis is indicated with 46%. In such cases, a complete pancreaticoduodenectomy is not always necessary and a local excision may be sufficient.⁶ Only few cases of sigmoid cancer forming a sigmoidoduodenal fistula have been published.⁷

Patients undergoing multivisceral resection are reported to have a 5-year overall survival of 30–50% after complete resection. These survival rates can partially be explained by the fact that peritumoral inflammatory adhesions may intraoperatively appear as direct tumoral infiltration and that true T-stages are overestimated.³

Since T4-tumours represent stage IIb up to stage IV disease with still potentially curable tumours,⁸ all T4 tumours should be considered for radical and multivisceral resection. This case illustrates a palliative treatment of a sigmoidoduodenal fistula to alleviate clinical symptoms.

Learning points

- ▶ Malignant coloduodenal fistulas are rare, especially in the case of an adenocarcinoma of the sigmoid colon.
- ▶ Most frequently, coloduodenal fistulas are due to peptic ulcer disease or Morbus Crohn.
- ▶ Palliative resections of T4-tumours can be performed in patients of bad general conditions to alleviate clinical symptoms.
- ▶ A pancreaticoduodenectomy in the case of a malignant coloduodenal fistula is an adequate treatment option if an R0 resection can be achieved and if the patient is fit for surgery.

Contributors XH and PK wrote the paper, PK was the operating surgeon. CB and RD made corrections and the revision together with XH. CB performed the colonoscopy.

Competing interests None.

Patient consent Obtained.

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