

Small bowel adenocarcinoma. Two case reports

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SUMMARY: Small bowel adenocarcinoma. Two case reports.

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Introduction. *Small bowel adenocarcinoma is a rare tumor, with a still not well studied tumorigenesis process, and non-specific symptoms that cause a delay in the diagnosis and consequently a worst outcome for the patient. Videocapsule endoscopy (VCE) and double-balloon enteroscopy (DBE) have revolutionized the diagnosis and management of patients with small bowel diseases. Surgery is the treatment of choice when feasible, while the chemotherapeutic approach is still not well standardized.*

Case reports. *Two cases in 2 months (two women 52 and 72-year-old) of primary bowel adenocarcinoma is reported. The site of the tumor was in jejunum, instead of the most common site in duodenum. The patients underwent DBE with biopsy and ink mark. Laparoscopic-assisted bowel segmental resection was performed. The pathologic diagnosis was primary jejunum adenocarcinoma. No post-operative mortality or significant morbidities were noted.*

Conclusion. *The combination of DBE and laparoscopic-assisted bowel surgery represents an ideal diagnostic and therapeutic method.*

RIASSUNTO: Adenocarcinoma del digiuno. Due case report.

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Introduzione. *L'adenocarcinoma del digiuno è una neoplasia rara, di cui non è ancora stata accertata la tumorigenesi. La vaga sintomatologia determina il ritardo nella diagnosi e di conseguenza un peggior outcome per il paziente. L'endoscopia con videocapsula (VCE) e l'enteroscopia "a doppio pallone" (DBE) hanno rivoluzionato la diagnosi e il trattamento delle neoplasie del piccolo intestino. Quando possibile, la chirurgia è il trattamento di scelta, mentre la chemioterapia non è considerata ancora un trattamento standardizzato.*

Case report. *Due casi in due mesi (due donne di 52 e 72 anni) di adenocarcinoma primitivo del piccolo intestino. La sede è il digiuno, nonostante il sito più comune sia il duodeno. Le due pazienti sono state sottoposte a DBE con biopsie e marcatura con china. Il trattamento chirurgico effettuato è stata una resezione digiunale segmentaria laparoscopica. La diagnosi istologica è stata di adenocarcinoma primitivo del digiuno. Nulle morbidità e mortalità.*

Conclusioni. *La combinazione di DBE e trattamento laparoscopico rappresenta il gold standard diagnostico-terapeutico per l'adenocarcinoma del digiuno.*

KEY WORDS: Small bowel - Adenocarcinoma - Laparoscopy.
Piccolo intestino - Adenocarcinoma - Laparoscopia

Introduction

Primary malignancies of the small bowel represent only 2,4% of all gastrointestinal (GI) malignancies and 1% of GI tumor-related death (12-16). Adenocarcinoma is the most common malignancy of the small bowel, comprising about one-third of all small bowel ma-

lignancy. The most frequent site for small bowel adenocarcinoma is the duodenum (52%-55%), followed by the jejunum (18%-25%), the ileum (13%), and not otherwise specified site (10%-15%). In general, small bowel cancers have a low prevalence in Asian countries as compared to the West. These malignancies have a higher predilection for male. Genetic factors have been strongly implicated in the etiology of adenocarcinoma of the small intestine. Patients suffering from familiar adenomatous polyposis have a higher change of developing duodenal adenocarcinoma (21). These patients have high frequency of *p53* overexpression and *K-ras* mutation (2). Hereditary nonpolyposis colorectal cancer patients have a high likelihood of developing adenocarcinoma of small

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bowel (23). Environmental factors such as diet rich in red meat, salt-cured or smoked foods, as well as intake of tobacco and alcohol, have been implicated in the etiology of this malignancy (24-25).

Case reports

We present two cases of in 72 and 52 yrs-old women with neoplasms of the small intestine. The patients were admitted several times to the hospital due to not characteristic abdominal pain, periodical nausea and vomiting, anemia and an important loss of weight lasting few months. The fecal occult blood test was positive. Initially a diagnosis of inflammatory bowel disease were considered, although there were no direct evidence of this.

Abdominal ultrasound were unremarkable. Esophagogastroduodenoscopy and total colonoscopy yielded no evidence of gastrointestinal bleeding. One patient underwent cerebral CT to exclude endocranial hypertension. In one patient VCE after a unremarkable abdominal CT identified a stenosis of the terminal tract of the jejunum with shallow ulceration (Fig. 2). In the other patient abdominal CT identified stenosis of a the small bowel and dilatation of the stomach (Fig. 1). Double ballon enteroscopy was performed in both patients and showed stenosis of the jejunum.

Oncological laparoscopic segmental resection of the jejunum with the regional mesentery was performed. Intestinal continuity was then restored by a laparoscopic side to side stapled anastomosis. Pathology evaluation of the resected specimen verified a moderately differentiated adenocarcinoma infiltrating the wall, without lymph nodes involvement (T3N0M0). The specimen's margins were free of tumor.

The average length of stay in hospital was 7 days, without major postoperative complications.

Discussion

Small bowel neoplasms are usually misdiagnosed on first presentation or late diagnosed (17-18). The rare incidence of small-bowel tumors may contribute to the relatively low index of clinical suspicion for their presence. The majority of these tumors are clinically silent for long periods of time or start with nonspecific symptoms, such as abdominal pain, fecal occult bleeding, nausea, abdominal distention, crampy and vomiting. Obstruction is also a common presentation (19). Small bowel tumors are the third most common cause of small bowel obstruction in the United States (20). They are, sometimes, occasionally found during other surgical procedures. Nonetheless, clinical presentation rarely permits the distinction between benign and malignant lesions.

Laboratory tests may show anemia due to chronic blood loss. Liver function tests may reveal hyperbilirubinemia in case of duodenal tumors. Elevated transaminases may be found in case of liver metastasis. Diagnostic modalities used for assessing the existence of small bowel tumors include endoscopy and radiographic imaging. Abdominal X-ray may help in showing obstruction, however duodenal carcinomas especially those in the 3rd and 4th portions of the organ are often missed on barium



Fig. 1 - Specimen with stenosis.



Fig. 2 - Specimen with shallow ulceration.

X-ray examination (1) yielding a definite diagnosis in less than 5% of cases (2). Abdominal CT scan will reveal the exact site and extent of local disease as well as the presence of liver metastasis (26). Colonoscopy with ileoscopy may be useful in detecting lesions in terminal ileum and excluding a colonic pathology. Tocchi et al. (32) found that upper GI endoscopy had a 36% false negative result rate in identifying duodenal tumors. VCE has been shown to be a safe and effective non invasive method of diagnosis for small bowel abnormalities (3,4) and allows a more detailed inspection of the small intestine. VCE has also been shown to detect duodenal adenomatous polyps in 64,3% of those who were investigated for nobleeding cau-

ses (5). However in a pooled meta-analysis it was found that VCE had a 20% miss rate for SBN (27). Similar to our case of the woman of 72 yrs with VCE failed to reveal AC of the duodenum, there are increasing reports in the literature of failure of VCE to detect solitary small bowel neoplasms (6,7). Causes of failure to detect lesions by VCE may be due to rapid capsule passage through the proximal small bowel, decreased visibility due to luminal contents, or failure to reach the colon. Balloon assisted enteroscopy (BAE) utilizing either single balloon enteroscopy (SBE) or double balloon enteroscopy (DBE) offers a number of advantages when compared to other small bowel imaging studies. The advantages include visualization of the entire small bowel with the ability to provide tissue diagnosis and provide therapeutic modalities such as control of bleeding and dilation of strictures (8,9). Studies have calculated that BAE and VCE are in agreement in 61-74% and 96% in case of diagnosis of large tumors (10). In regards to small bowel neoplasms, balloon assisted enteroscopy can often find lesions originally missed by capsule endoscopy and is suggested as follow up study to a negative VCE exam (11). Arakawa reported equal diagnostic yields for both VCE and BAE with false negative cases of VCE and BAE due to failure to detect lesions in the proximal small bowel and inaccessibility of the site, respectively. In a recent meta-analysis comparing VCE and BAE, there was no significant differences in yields between the two procedures (61% vs 56%, respectively) (28-29).

The failure of BAE to show superiority over VCE in the detection of lesions may be due to complete evaluation of the entire small bowel in only 60-70% of cases. A disadvantage of the procedure is the time needed to

visualize the small bowel (30), its invasiveness, and the reports of post procedure intestinal necrosis (31), perforation and acute pancreatitis. Due to the failure of a true gold standard in evaluation of the small bowel utilization of both these procedures they may be complementary.

Conclusion

We highlight the difficulties of diagnosis of the small bowel carcinoma. The diagnosis requires a high index of suspicion and early investigations. Small bowel malignancy should be considered when more common causes have been excluded, especially if there are general features suggestive of malignancy, such as anorexia, abdominal pain or weight loss. Abdominal CT is not unremarkable, giving more information about the possibility of stenosis than abdominal radiography or ultrasound. Videocapsule endoscopy is an important diagnostic procedure; it can identify lesions that are often missed by traditional tests. Macroscopic pathology may be missed at VCE especially in the proximal small bowel, and a negative VCE study does not exclude significant disease. Alternative imaging modalities, such as DBE should be considered when clinical suspicion persists (30). Double balloon enteroscopy is a safe procedure and overcomes the limitations of VCE. Both procedures are complementary in patients with suspected small bowel tumors. DBE give histopathological confirmation of the diagnosis and, if necessary, endoscopic therapy (31). The combination of DBE and laparoscopic surgery represents an ideal therapeutic option, especially for unknown gastrointestinal bleeding in case of tumors (32).

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