CASE REPORT

Intestinal obstruction caused by small bowel adenocarcinoma misdiagnosed as psychogenic disorder

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SUMMARY

We describe a case of intestinal obstruction caused by a small bowel adenocarcinoma misdiagnosed as psychogenic disorder. A woman in her 40s was admitted to Nagoya City University Hospital with fatigue, anorexia, nausea and vomiting. CT, oesophagogastroduodenoscopy and colonoscopy revealed no signs of organic abnormality in her gastrointestinal tract. As the patient had previously been diagnosed with and treated for depression, her symptoms were suspected to be due to psychogenic disorder. Therefore, she was diagnosed with severe depression and was administered antidepressant agents. Despite intense psychiatric treatment, her symptoms worsened and she was later diagnosed with ileus due to adenocarcinoma in the jejunum. After drainage by insertion of a transnasal decompression tube, a partial jejunum resection was performed. After the resection, the patient's symptoms including fatigue and depression resolved without the use of antidepressant agents.

BACKGROUND

The incidence of small bowel neoplasms is very rare and accounts for only 1%–3% of all gastrointestinal tumours.^{1–7} Among them, small bowel adenocarcinoma (SBA) is the most common type, comprising approximately 25%–40% of all small bowel tumours.^{1–3 5–7} Despite recent advances in radiographic imaging and endoscopic techniques, early detection of small bowel tumours is still low owing to the vague and non-specific nature of the initial symptoms.^{1 3} Because small bowel tumours are so rare, patients who present with nausea and abdominal pain are occasionally misdiagnosed as having psychogenic disorder because the cause of their symptoms is not identified. We herein report a case of intestinal obstruction caused by SBA, misdiagnosed as psychogenic disorder.

CASE PRESENTATION

A woman in her 40s presented with fatigue, depression, anorexia, nausea and vomiting. She had a medical history of depression, for which she had been treated in her 20s. Owing to continuous nausea, she had reduced her intake of food. Because she had severe fatigue and had become groggy, she was admitted our hospital for medical examination and treatment. She had no family history of malignant diseases.

INVESTIGATIONS

She was assessed as being dehydrated and malnourished. Laboratory data revealed that she was anaemic. Oesophagogastroduodenoscopy and colonoscopy revealed no signs of organic abnormality of her gastroduodenal tract, colon or rectum. A CT scan showed a very large uterine leiomyoma, which was suspected to be the cause of the anaemia. Jejunum was slightly dilated at the time, but no jejunal abnormality was detected (figure 1). Laboratory findings indicated anaemia, hypoproteinaemia, hypoalbuminaemia and electrolyte imbalance, but no significant elevation of serum levels of tumour markers such as carcinoembryonic antigen, carbohydrate antigen 19-9 and soluble interleukin-2 receptor (table 1). Although the patient was treated with intravenous fluids and medication for anaemia, anorexia and nausea for about 2 weeks, her symptoms, including depression and fatigue, did not resolve. Her anaemia resolved following treatment with an iron preparation, and a gynaecologist concluded that the uterine leiomyoma had not caused her symptoms.

TREATMENT

Based on the patient's medical history, the results of imaging studies and laboratory data, psychogenic disorder was suspected. A psychiatrist assessed the patient and noted that she had been feeling stressed about issues at her workplace. A diagnosis of severe depression was made based on the Diagnostic and Statistical Manual of Mental Disorders⁵, and the patient was subsequently treated with antidepressant agents while in a locked ward for psychogenic disorders. Her mental condition was evaluated using the Global Assessment of Functioning scale.

Several days after starting treatment for psychogenic disorder, the patient's condition seemed to improve slightly. However, her nausea then worsened and she began vomiting four to five times a day. When a patient is in this condition, a physician would normally re-evaluate their laboratory data and conduct further imaging studies. But in this case, psychiatric treatment was continued without further imaging studies as there had been no improvement in the patient's mental condition. One week later, she went into hypovolaemic shock and experienced disturbance of consciousness. A second CT scan and repeat laboratory examination were then done. The CT scan revealed that

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Figure 1 CT scan findings on admission showing (A) no dilation of the stomach (white arrow), (B) no dilation of the duodenum (white arrow), (C) a slightly dilated jejunum (white arrow) and slight wall thickness (red arrow head) and (D) a uterine leiomyoma (white arrow).

intestinal obstruction was causing the ileus. Jejunum wall thickness, suspected to be a tumour, was noted where the ileus began (figure 2). Laboratory data indicated severe electrolyte imbalance and dehydration. Subsequently, drainage using a transnasal decompression tube and intravenous drip were started. About 1 week later, her general condition improved and more precise studies were conducted: enteroclysis and double-balloon enteroscopy. Enteroclysis showed circular translucency located near the proximal part of the jejunum and indicated that the tract was almost completely obstructed (figure 3A). Enteroscopy revealed a massive jejunal tumour and biopsy specimens taken from it showed that the tumour was an adenocarcinoma (figure 3B). Fortunately, visible metastasis and dissemination were not detected, so a partial jejunum resection was performed.

Table 1 Results of laboratory investigations

Haematology		Biochemistry	
WBC	11.7×10 ⁹ /L	TP	8.30 g/dL
RBC	4.86×10 ¹² /L	Albumin	4.80 g/dL
Hb	105 g/L	Na	127 mEq/L
Platelets	455×10 ⁹ /L	K	3.7 mEq/L
Serology	CRP 0.15 mg/dL	Cl	86 mEq/L
		T-Bil	0.7 mg/dL
		ALP	198 IU/L
Tumour markers	CEA 1.3 ng/mL CA19-9 25.6 U/mL sIL-2R 526 U/mL SCC 0.8 ng/mL NSE 27.7 ng/mL ProGRP 52.6 pg/mL	AST	24 IU/L
		ALT	22 IU/L
		LDH	88 IU/L
		γGTP	12 IU/L
		Amylase	78 IU/L
		BUN	25.9 mg/dL
		Creatinine	0.69 mg/dL
		Glucose	110 mg/dL
		Uric acid	9.8 mg/dL

ALP, alkaline phosphatase; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BUN, blood urea nitrogen; CA19-9, carbohydrate antigen 19-9; CEA, carcinoembryonic antigen; CRP, C-reactive protein; Hb, haemoglobin; K, potassium; LDH, lactate dehydrogenase; Na, sodium; NSE, neuron-specific enolase; ProGRP, pro-gastrin-releasing peptide; RBC, red blood cells; SCC, squamous cell carcinoma; sIL-2R, soluble interleukin-2 receptor; TP, total protein; T-Bil, total bilirubin; WBC, white blood cells; γGTP, γ-glutamyl transpeptidase.

Figure 2 CT scan findings on exacerbation of symptoms showing (A) dilation of the stomach and duodenum (white arrows, plain CT), (B) dilation of the duodenum and jejunum (white arrows) and cleared wall thickness (red arrow heads), (C) cleared wall thickness (red arrow heads, contrast-enhanced) and (D) cleared wall thickness (red arrow heads, contrast-enhanced, coronal section).

OUTCOME AND FOLLOW-UP

After the operation, the patient's symptoms completely disappeared without the use of antidepressant agents and the patient was discharged.

DISCUSSION

Malignant tumours of the small bowel are rare and account for 1%–4% of all gastrointestinal tract malignancies.^{1–7} Among small bowel malignant tumours, SBA is the most common aetiology, accounting for about 40% of small bowel malignancies.^{1–3 5–7} SBA is most frequently located in the duodenum (50%), and less frequently in the jejunum (30%) and ileum (20%).^{3 5–7} The initial symptoms of SBA are non-specific alimentary symptoms such as weight loss, anaemia and abdominal discomfort.^{3 5 6} In cases of jejunal tumour, the clinical presentations of abdominal pain and nausea are due to intestinal obstruction.⁸ Although there have been many reports on radiographic imaging and endoscopy techniques advancing in recent years, early detection of SBA is still challenging.^{1 3 5 6 8} Macari *et al* reported that optimal evaluation of abnormal small bowel is facilitated when the small bowel is well distended, contrast material has been administered and thin-section CT is used. Under these conditions, abnormal small bowel loop is present when the wall thickness is ≥3 mm despite adequate luminal distention. In enhanced CT, heterogeneous

Figure 3 Findings of enteroclysis and enteroscopy of the jejunal tumour showing (A) circular translucency located near the proximal part of the jejunum and almost completely obstructed tract and (B) a very large tumour obstructing the tract.

enhancement is typical of small bowel neoplasms, especially SBA and gastrointestinal stromal tumours.⁹

Detection of SBA at an early stage is difficult. SBA is rare and its symptoms are non-specific, so patients with SBA who present with nausea and abdominal pain are occasionally misdiagnosed with psychogenic disorder, and sometimes it is concluded that the cause of the symptoms is unknown. In the case that we report here, the patient initially presented with continuous nausea and appetite loss, but lack of abdominal pain. Evaluation of the patient's gastrointestinal tract using oesophagogastroduodenoscopy, colonoscopy and CT revealed no abnormality at that time. Furthermore, because she had previously been diagnosed with and treated for depression, it was assumed that the cause of the symptoms was psychogenic disorder. For these reasons, the patient was misdiagnosed. Although Kobayashi *et al*¹⁰ suggested that faecal occult blood testing might be useful for detecting small bowel disease, we did not carry out such tests on our patient because various other tests gave no indication of malignancy was detected via various tests. In retrospect, stool analysis for occult blood might have suggested a malignancy in the small intestine.

Although it is difficult to detect early-stage SBA, continued evaluation of this patient by imaging, and without the assumption that psychogenic disorder was the likely cause, could have led to earlier detection and treatment of her tumour. Two stages of the patient's assessment could have been improved. First, the initial CT scan was evaluated without enhancement and thin sectioning. Retrospectively, a slightly dilated jejunum with slight wall thickness was noted on the CT scan taken at the time of the patient's admission (figure 1). So more precise evaluation by CT at an earlier stage could have detected the abnormality. Second, even if the obstruction was not detected at the time of admission, there were several symptoms of an abnormality: continuous nausea, frequent vomiting and abdominal distention. Such symptoms normally warrant repeated evaluation. Since it was initially assumed that the patient's symptoms were caused by psychogenic disorder, her symptoms worsened, and the treatment for psychogenic disorder was strengthened. We prescribed mirtazapine, a noradrenergic and specific serotonergic antidepressant. Mirtazapine has the effect of blocking the 5-HT₂ and 5-HT₃ receptors, thus inducing the side effects of nausea and vomiting less frequently than selective serotonin reuptake inhibitors (SSRI).^{11 12} We therefore did not suspect mirtazapine to be the cause of nausea and vomiting because the medication temporarily improved such symptoms; however, some days later, her symptoms worsened without the presence of many other medicines.

Some papers have referred to cases of misdiagnosed organic diseases as psychiatric. For instance, Saravay *et al*¹³ linked the physician's unconscious wish to discontinue clinical responsibility in a situation that threatened his self-esteem and record of competency to a misdiagnosis. In regard to the frequency of misdiagnosis by non-psychiatric physicians, diagnoses of major depression were subsequently made by psychiatric consultants in only 22% of cases.¹⁴ In addition, with regard to the misdiagnosis of a small bowel tumour as a psychiatric disorder, out of 20 case reports cited in a case series study, none were identical to our present case.¹⁵

Koyama *et al* reported that one factor related to misdiagnosis is cognitive bias. Anchoring, a kind of cognitive bias, is the tendency to be affected by an initial impression that is not adjusted by information that is obtained later. The following points are therefore important for reducing diagnostic errors: (1) the possibility of rare diseases and their characteristics

should be considered; (2) trivial abnormal findings should not be ignored; (3) long-term observation is important for accurate diagnosis and (4) early diagnosis of psychogenic diseases and depressive state should be avoided.¹⁵

In conclusion, we have reported a case of intestinal obstruction caused by SBA that was misdiagnosed as psychogenic disorder. It illustrates the importance of careful diagnosis without assumption.

Learning points

- ▶ Malignant tumours of the small bowel are rare and difficult to be diagnosed at early stage.
- ▶ Continued evaluation of patient without the assumption that psychogenic disorder is the cause could lead to earlier detection and treatment.
- ▶ When a patient reports of prolonged abdominal discomfort, such as nausea and abdominal pain, precise and reiterated evaluation should be performed without assumption, even if initial evaluations show no abnormality.

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