An Unusual Case of Duodenal Obstruction due to Metastatic Cervical Cancer

We report a rare case of cervical cancer with duodenal obstruction accompanied by obstructive symptoms, which was treated using duodenal stenting. A 48-year-old woman was diagnosed with stage IV cervical cancer (according to the International Federation of Gynecology and Obstetrics staging system), which had invaded the vagina, the uterine body, and the external iliac and common iliac lymph nodes. Endoscopy showed an encircling mass with erythematous mucosa and luminal narrowing in the second and third portions of the duodenum, which prevented the endoscope from advancing. We placed an uncovered stent in the duodenum, which ameliorated abdominal discomfort, nausea, and vomiting, and simultaneously performed a biopsy. Endoscopic stent insertion appears to be the most effective treatment for duodenal obstruction in patients with advanced cancer. (*Korean J Helicobacter Up Gastrointest Res* 2012;12:128-131)

Key Words: Duodenal obstruction; Duodenal stent

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INTRODUCTION

Malignant duodenal obstruction occurs in approximately 20% of patients with primary pancreatic, gastric, or duodenal carcinomas. However, duodenal obstruction in patients with cervical cancer is rare. Although early detection of cervical cancer reduces the chances of progression to the advanced stage of the disease, physicians should be aware of its varied presentations. We report a rare case of cervical cancer with duodenal obstruction accompanied by obstructive symptoms, which was treated by duodenal stenting.

CASE REPORT

A 48-year-old woman presented to a clinic with intermittent vaginal bleeding that had persisted for 3 months. Histological analysis indicated squamous cell carcinoma (SCC), and she was subsequently referred to the oncology department of the Chungnam University School of Medicine. The findings of MRI showed that the mass had invaded the external iliac and common iliac arteries as well as the uterine body and vagina. We diagnosed the patient as having stage IV cervical cancer on the basis of the International Federation of Gynecology and Obstetrics staging system. About 3 months after the diagnosis, she was referred to the gastroenterology department because of

abdominal discomfort and nausea, which exacerbated after meals but improved after vomiting.

The initial blood pressure was 120/70 mmHg, and the initial body temperature was 36.9°C. Her abdomen was mildly distended. Physical examination showed mild epigastric tenderness without any muscle guarding or rebound tenderness. The results of the initial laboratory test were as follows: white blood cell count 3,500 cells/mm³ (normal range, 3,500~10,000 cells/mm³), hemoglobin level 10.4 g/dL (normal range, 12.0~16.0 g/dL), hematocrit level 31.9% (normal range, 36~46%),

Fig. 1. Indicated by the arrow showed severe stenosis between the second and third portions of the duodenum and a linear passage on upper gastrointestinal (UGI).

aspartate transaminase level 22 IU/mL (normal range, 0~31 IU/mL), alanine transaminase level 15 IU/mL (normal range, 0~31 IU/mL), total protein level 7.0 g/dL (normal range, 6.5~8 g/dL), and albumin level 3.5 g/dL (normal range, 4.0~5.0 g/dL). The hemoglobin level in stool was 0 ng/mL (normal range, 0~100 ng/mL).

Upper gastrointestinal (UGI) series and abdominal CT scan were performed to confirm the duodenal obstruction, and the findings showed severe stenosis between the second and third portions of the duodenum and a linear passage on UGI series (Fig. 1). The follow-up abdominal CT scan (Fig. 2B) showed newly developed focal circumferential wall thickening in the second and third portions of the duodenum, with increased enhancement and luminal narrowing, and newly developed enlargement of the left para-aortic lymph node at the kidney level (Fig. 2B), which was not observed during the initial abdominal CT scan (Fig. 2A). Endoscopy showed an encircling mass with erythematous mucosa and narrowing to a pinpoint in the second portion of the duodenum (Fig. 3A), which prevented the endoscope from being advanced.

The patient reported persistent postprandial discomfort, anorexia, nausea, and intermittent vomiting. Therefore, endoscopic stent placement was performed to relieve her symptoms.

An uncovered, self-expandable metallic stent (diameter 20 mm, length 120 mm, HANAROSTENT; M.I. Tech Co., Seoul, Korea) was placed (Fig. 3B), which ameliorated the postprandial discomfort and intermittent vomiting. There were no adverse events, such as abdominal pain or perforation. We si-

Fig. 2. Previous abdominal CT scan (A) and 4-month follow-up abdominal CT scan (B) showing newly developed focal circumferential wall thickening in the third portion of the duodenum with increased enhancement and luminal narrowing indicated by left side arrow, as well as newly developed left para-aortic lymph nodes enlargement at the kidney level indicated by right side arrow (B).

Fig. 3. Endoscopic image showing duodenal obstruction (A) and endoscopic stent placement (B).

Fig. 4. Indicated small arrows showed cytoplasmic keratinization of squamous tumor cells. Photomicrograph (H&E, $\times 200$) of squamous tumor cells showing cytoplasmic keratinization (small arrows).

Fig. 5. The stent, as seen on an abdominal radiograph.

multaneously obtained a biopsy specimen from the third portion of the duodenum and performed hematoxylin staining. On the basis of the results, metastatic SCC of the large-cell keratinizing type was diagnosed. The histopathological findings of this biopsy specimen were consistent with the results of the initial diagnosis of SCC (Fig. 4).

Abdominal radiography confirmed that the stent was placed between the second and third portions of the duodenum (Fig. 5). Five days after stent placement, the patient was allowed oral intake of food.

DISCUSSION

Duodenal obstruction resulting from primary or metastatic cancer is a late occurrence in patients with advanced disease.

Obstructive symptoms, such as nausea, vomiting, and abdominal distention, as well as nutritional deficiencies, can lead to frequent hospitalization and high morbidity.¹

For palliative purposes, the main clinical goal for patients with malignant duodenal obstruction is restoration of the ability to tolerate oral diets. As the median survival duration in these patients may be as short as 3~4 months,^{2,3} an ideal treatment would quickly restore the oral dietary intake with few complications, and thus shorten the hospital stay, with no negative impact on survival.

The traditional approach for palliating malignant duodenal obstruction is open gastrojejunostomy. More recently, there have been reports on the effectiveness of laparoscopic gastrojejunostomy for palliating duodenal obstruction.^{4,5} However, over the past decade, palliative endoscopic stenting has been

increasingly performed. Many different types of UGI stents are available,⁶ and palliative endoscopic stenting is being increasingly advocated and performed.⁷

Endoscopic stent placement appears to be the safest and the most effective treatment for duodenal obstruction in patients with advanced cancer. Compared with palliative surgery, the placement of self-expandable metallic stents is associated with higher clinical success rates, less morbidity, shorter interval between the procedure and oral intake initiation, lower rate of delayed gastric emptying, and shorter hospital stay.^{8,9}

A review of 32 publications published from 1992 to 2004 on metallic stent insertion for duodenal malignancies under fluoroscopic or endoscopic guidance showed that technical and clinical success was achieved in 97% and 87% of cases, respectively, with an overall complication rate of 28% (n=606).¹⁰ Stent migration was reported in 31 patients (5%) and stent obstruction occurred in 104 patients (18%) mainly because of tumor in growth. However, life-threatening complications are rare (<1%).¹¹ In this case, there were no significant complications. Duodenal obstruction is a common condition caused by advanced malignancies, such as pancreatic, gastric, and duodenal cancers, or by the metastatic spread of other malignancies. The proportion of cervical cancer cases with gastrointestinal involvement is low, accounting for only 8% of all cases. Moreover, metastasis to the small bowel is very rare. In a study on pretreatment laparotomy in 150 patients, 11 patients had intestinal lesions. Of these lesions, 8 were located in the small bowel (incidence of small bowel disease, 5.3%).¹² Duodenal lesions have also been reported, but rarely.

Cervical cancer can metastasize locally through lymphatic channels or a hematogenous route and generally remains restricted to the pelvic region. Cervical cancer can metastasize to the small bowel by direct invasion from the affected lymph nodes, primarily from the para-aortic or mesenteric nodes to the bowel serosa.¹³ The lesions can cause bowel obstruction, bleeding, or abdominal pain, and poor oral intake, which can lead to dehydration, malnutrition, and poor quality of life.¹⁴

In this case, abdominal CT scan showed lymph node metastasis in both the external iliac and common iliac lymph nodes and the left para-aortic nodes. Thus, metastasis, which causes duodenal obstruction, is thought to spread through lymph nodes.

The case reported here is unusual because of the rarity of

duodenal invasion in patients with advanced cervical cancer. And, obstructive symptoms, such as nausea and abdominal discomfort, improved after successful stent placement. In conclusion, the cause of malignant duodenal obstruction should be carefully determined from among the several potential causes and appropriate treatment should be administered.

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