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Case Report

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Unusual Location of Splenic Flexure of Colon Moved by Megacolon: A Case Report

(Short title:** Unusual Location of Splenic Flexure of Colon**)

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Abstract

A 62-year-old female patient suffering from intractable slow transit constipation for more than ten years was admitted to our hospital to receive surgical treatment. Computed tomography (CT) revealed that her entire colon was dilated, resembling a megacolon, and the splenic flexure of the colon was located on the dome of the diaphragm. She underwent total colectomy with ileorectal anastomosis by open surgery. An approximately 1.5 cm-long perforation of the diaphragm was clearly detected immediately after the splenic flexure of the colon was mobilized. The perforation could be immediately closed by three sutures with an absorbable thread. She was discharged from our hospital ten days after surgery without any complications. Whenever the splenic flexure of the colon is detected to be on the dome of the diaphragm by preoperative CT, we should mobilize this area very carefully to avoid not only intraoperative bleeding but also perforation of the diaphragm.

Keywords:

splenic flexure of colon, perforation of diaphragm, total colectomy, slow transit constipation

Introduction

Mobilization of the splenic flexure of the colon has been considered technically challenging due to intraoperative bleeding [1]. Moreover, perforation of the diaphragm while mobilizing the splenic flexure of the colon during surgery is extremely rare. The patient underwent total colectomy due to intractable slow transit constipation (STC) [2-4]. She had a preoperative computed tomography (CT) scan which revealed that her megacolon had moved the splenic flexure of the colon to the top of the left diaphragm dome, which was unusual. A perforation of the diaphragm was clearly and immediately detected after the splenic flexure of the colon was mobilized. This rare case has never been reported previously.

Aim

To elucidate the reason of perforation of the diaphragm during mobilization of the splenic flexure of the colon.

Method

The medical record and preoperative examinations of the patient were reviewed.

Case Report

A 62-year-old female patient suffering from intractable STC for more than ten years was admitted to our hospital to receive surgical treatment. She did not have hypertension, hyperlipidaemia, diabetes, or diseases requiring steroid administration. No problems were detected in the preoperative routine examinations. She had a preoperative CT scan which revealed that her entire colon was dilated, resembling a megacolon, and the splenic flexure of the colon was located on the top of the left diaphragm dome (Figure 1).

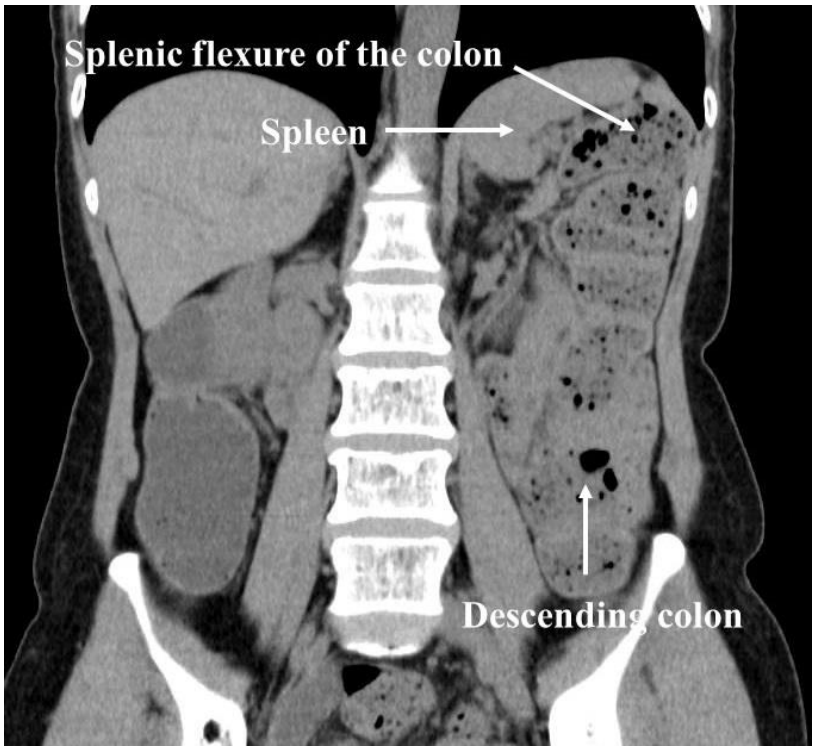

Figure 1: Preoperative CT scan revealed that splenic flexure of the colon was located on the top of left diaphragm dome.

The splenic flexure of the colon was located on the left side of the spleen and closely adjacent to the diaphragm (Figure 2).

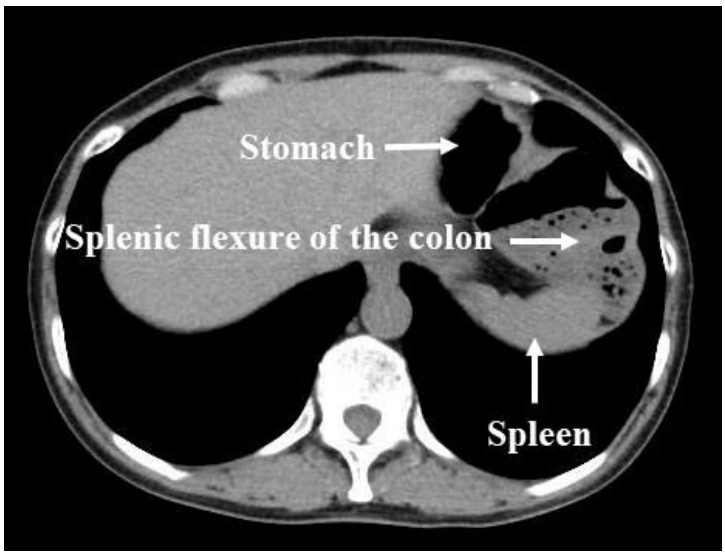

Figure 2: Preoperative CT revealed that the splenic flexure of the colon was located left side of the spleen and closely adjacent to the diaphragm.

She underwent total colectomy with ileorectal anastomosis, which is the gold standard surgical procedure for patients with intractable STC [2-4], by open surgery. During surgery, an approximately 1.5 cm-long perforation in the diaphragm was detected immediately after the splenic flexure of the colon was mobilized. The perforation could be immediately closed by three sutures with an absorbable thread. The surgery was completed within two hours, and she was discharged from our hospital ten days after surgery without any complications. No diaphragm tissue was found at the splenic flexure of the colon in the resection specimen (Figure 3). The patient was fine with no complications more than three years after the surgery.

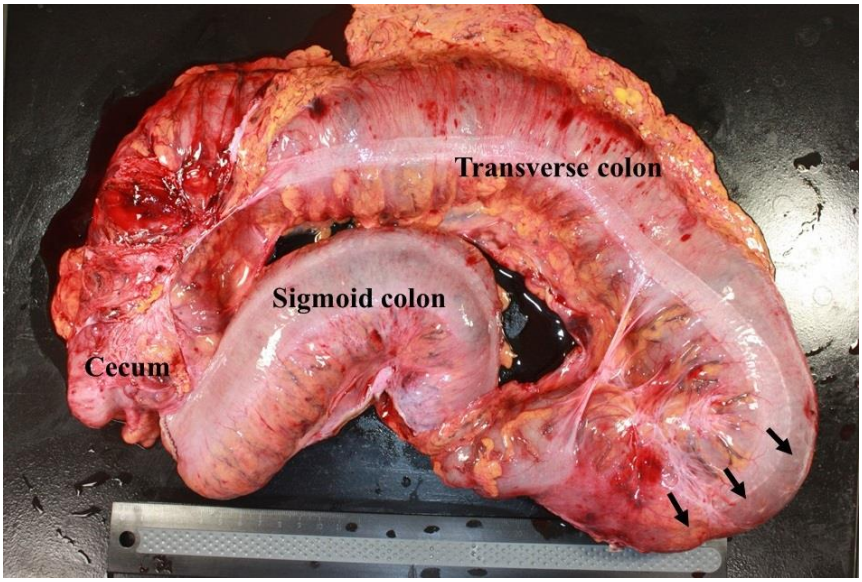

Figure 3: The diaphragm tissue was not found at the spleen flexure of the colon in the resected specimen. Arrows point out the spleen flexure of the colon.

Discussion

The splenic flexure of the colon is anatomically complex due to the presence of multiple vessels, surrounding organs, multiple layers, and irregular adhesions [5-7]. Mobilization of the splenic flexure of the colon has been considered technically challenging due to intraoperative bleeding [1]. Moreover, perforation of the diaphragm caused by mobilization of the splenic flexure of the colon during surgery is extremely rare. To the best of our knowledge, this is the first report about this phenomenon.

The splenic flexure of the colon was defined as the most superior and lateral aspect of the transverse colon in relation to the splenic hilum on CT [8]. The splenic flexure of the colon located in more cephalic sites to the splenic hilum and located on the left side of the spleen and/or adjacent to the diaphragm are rare [8]. Although the pancreas tail and the spleen are anchored to the retroperitoneum, the splenic flexure of the colon, which was filled with a large number of intestinal contents, gradually started to move to the cephalad side as the intractable STC advanced. Finally, the splenic flexure of the colon may have moved on the top of the left diaphragm dome.

In conclusion, whenever the splenic flexure of the colon is detected to be located on the dome of the diaphragm by preoperative CT, we should mobilize this area very carefully to avoid not only intraoperative bleeding but also perforation of the diaphragm.

Conflicts of Interest

The authors declare no conflicts of interest.

Consent for publication

The written consent to publish images or other personal or clinical details of participants was obtained from the patient.

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Authors' contributions

MS and HK designed and drafted the manuscript. All authors performed the operation. MS, HK, HK, SH, YT, and TH assisted in data collection and manuscript preparation. All authors read and approved the final version of this manuscript.

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