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A colovesical fistula with a persistent descending mesocolon due to partial situs inversus: A case report

Tetsuya Mochizuki[a], Hirofumi Tazawa[a,*], Yuzo Hirata[a], Yoshio Kuga[b], Tomohiro Miwata[b], Sotaro Fukuhara[a], Kouki Imaoka[a], Seiji Fujisaki[a], Mamoru Takahashi[a], Saburo Fukuda[a], Toshihiro Nishida[c], Hideto Sakimoto[a,d]

[a] Department of Surgery, Chugoku Rosai Hospital, 1-5-1, Tagaya, Hiro, Kure City, Hiroshima 737-0193, Japan
[b] Department of Internal Medicine, Chugoku Rosai Hospital, 1-5-1, Tagaya, Hiro, Kure City, Hiroshima 737-0193, Japan
[c] Department of Diagnostic Pathology, Chugoku Rosai Hospital, 1-5-1, Tagaya, Hiro, Kure City, Hiroshima 737-0193, Japan
[d] Department of Gastroenterological and Transplant Surgery, Applied Life Sciences, Institute of Biomedical and Health Sciences, Hiroshima University, 1-2-3, Kasumi, Minami-ku, Hiroshima 734-8551, Japan

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ABSTRACT

INTRODUCTION: Situs inversus viscerum, a congenital condition in which the visceral organs are a mirror image of their normal physiological positions, could be total or partial. Persistent descending mesocolon (PDM) is a congenital anomaly that is asymptomatic because of its short length. PDM causing intestinal obstruction is a known clinical complication.

PRESENTATION OF CASE: A 74-year-old woman presented with pneumaturia and enteruria for two months, and recurrent cystitis for a month. An enhanced computed tomography (CT) showed air in the bladder along with sigmoid colonic diverticula adherent to it, suspecting a fistula. The CT also showed partial situs inversus with the common hepatic artery, and left colic artery arising abnormally from the superior mesenteric artery (SMA). Minimally invasive endoscopic closure using the over-the-scope clipping system was difficult because of thickening and scar tissue due to chronic inflammation from diverticulitis. Thus, a sigmoidectomy was performed to close the fistula. Intraoperatively, we noted an abnormally fixed descending mesocolon. An emergency reoperation was performed on the sixth postoperative day owing to an anastomotic leak. Suture failure was attributed to these congenital abnormalities due to insufficient blood flow from an absent marginal vessel and a high endocolonic pressure by adhesions. Sigmoid colon re-resection and maturation of an ileostomy was performed. The patient had no specific postoperative complications, and the ileostomy was closed after three months.

CONCLUSION: We report an extremely rare case of colovesical fistula due to a PDM in a patient having partial situs inversus with abnormal branches originating from the SMA.

1. Introduction

In patients having situs inversus, the viscera could be present in all locations between their normal and mirror image positions. Situs inversus is a lateralization anomaly often associated with other malformations that alter prognosis such as isolated cardiac malformations, cardiosplenic syndromes, or Kartagener syndrome [1]. Genetic and environmental factors have been reported as possible causes. Lee et al. report that some cases could be attributed to factors in early embryonic life [2]. Failure of fusion between the primitive dorsal mesocolon and the parietal peritoneum during the fifth month of gestation leads to PDM. In the 1960s, this abnormality was reported by both Radiology and Gynecology [3,4]. A colovesical fistula is a well-known complication in many different diseases. Among the causes described in literature, the commonest are diverticular and inflammatory bowel disease (predominantly Crohn's) [5,6]. We report an extremely rare case of colovesical fistula due to a persistent descending mesocolon in a patient having partial situs inversus.

2. Presentation of case

A 74-year-old woman known to have renal stones presented to the Department of Urology with a two-month history of pneumaturia and enteruria, and recurrent cystitis for a month. Cystoscopic examination showed an edematous posterior bladder wall with debris flowing from a fistula in the center (Fig. 1a). An enhanced CT scan showed air in the bladder and diverticula adherent to

Abbreviations: PDM, persistent descending mesocolon; SMA, superior mesenteric artery; CHA, common hepatic artery; LCA, left colic artery; CT, computed tomography; OTSC, over-the-scope clipping; IMA, inferior mesenteric artery.

* Corresponding author.
E-mail address: thiroes@gmail.com (H. Tazawa).

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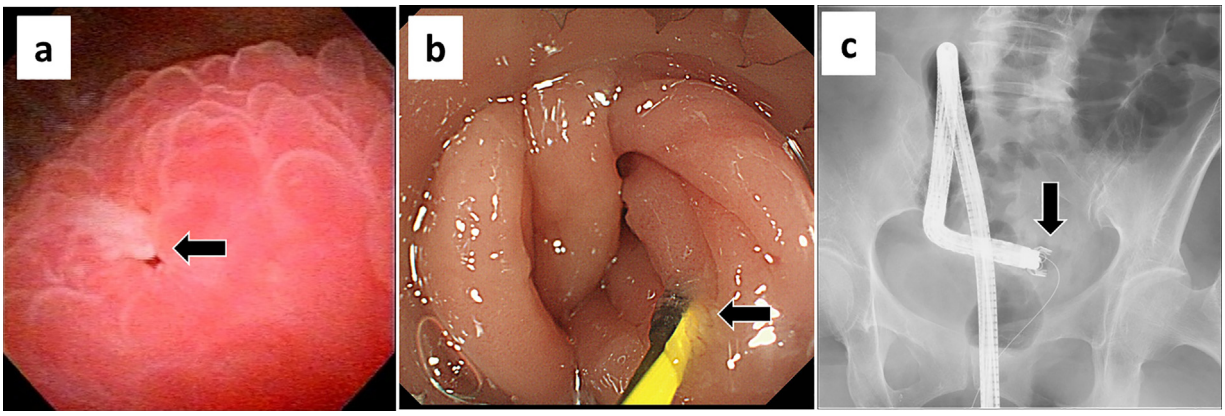

Fig. 1. (a) Cystoscopy showing edematous mucosa of the posterior bladder wall and a hole in the center (arrow). (b) Endoscopy showing the guide wire passing through the colovesical fistula (arrow). (c) Roentgenoscopy showing the endoscope with a mounted OTSC clip (arrow) approaching the fistula.

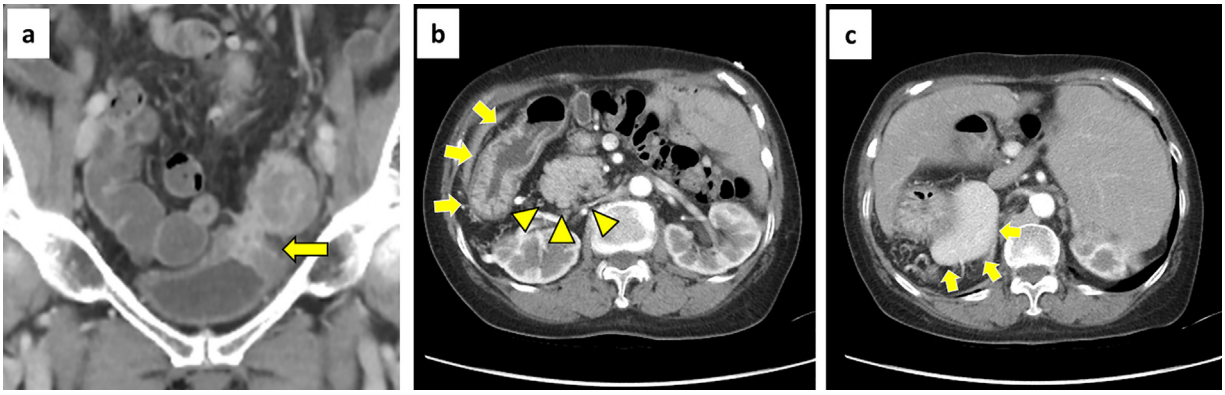

Fig. 2. (a) Coronal CT images showing a thickened wall of the sigmoid colon adherent to the bladder (arrow), and a suspected colovesical fistula. (b) Abdominal CT showing stomach (arrow) and pancreas (arrowhead) transposed to the right side. (c) Abdominal CT showing the spleen on the right (arrow).

it, leading to the suspicion of a fistula (Fig. 2a). Based on these findings, she was diagnosed as having a colovesical fistula due to sigmoid diverticulitis. The CT scan also revealed transposition of the intra-abdominal organs, viz., the stomach, spleen, and pancreas with the descending colon transferred to the middle of the pelvis (Fig. 2b and c). Additionally, it also showed the common

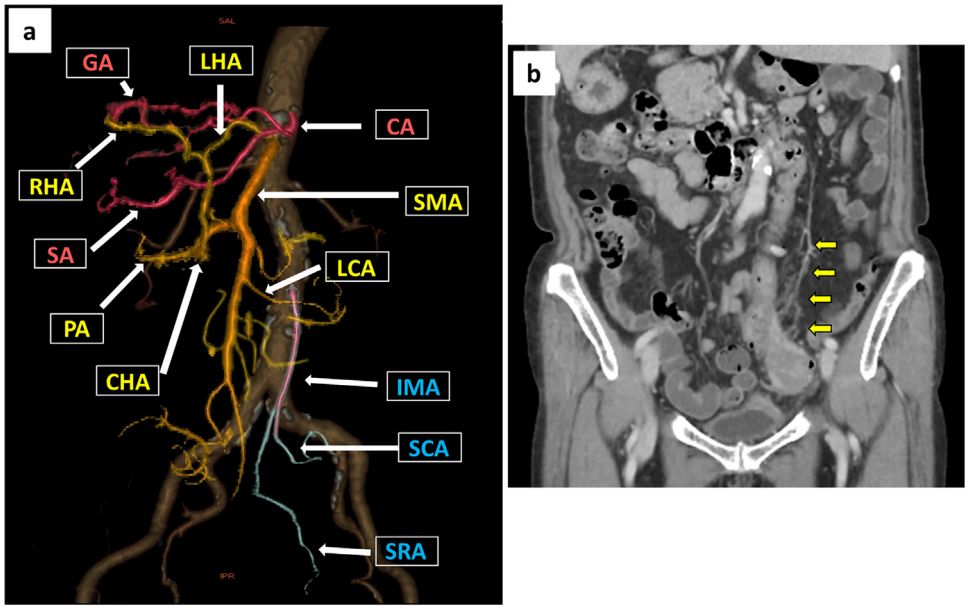

Fig. 3. (a) Common hepatic artery and left colic artery arising from the superior mesenteric artery. (CA: celiac artery, SA: splenic artery, GA: gastric artery, SMA: superior mesenteric artery, CHA: common hepatic artery, RHA: right hepatic artery, LHA: left hepatic artery, PA: pancreatic artery, LCA: left colic artery, IMA: inferior mesenteric artery, SCA: sigmoid colon artery, SRA: superior rectal artery). (b) Sigmoid artery and superior rectal artery branching from the inferior mesenteric artery (arrow).