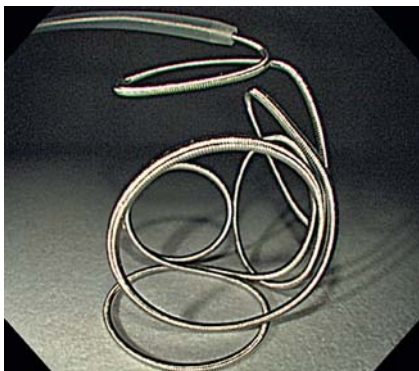


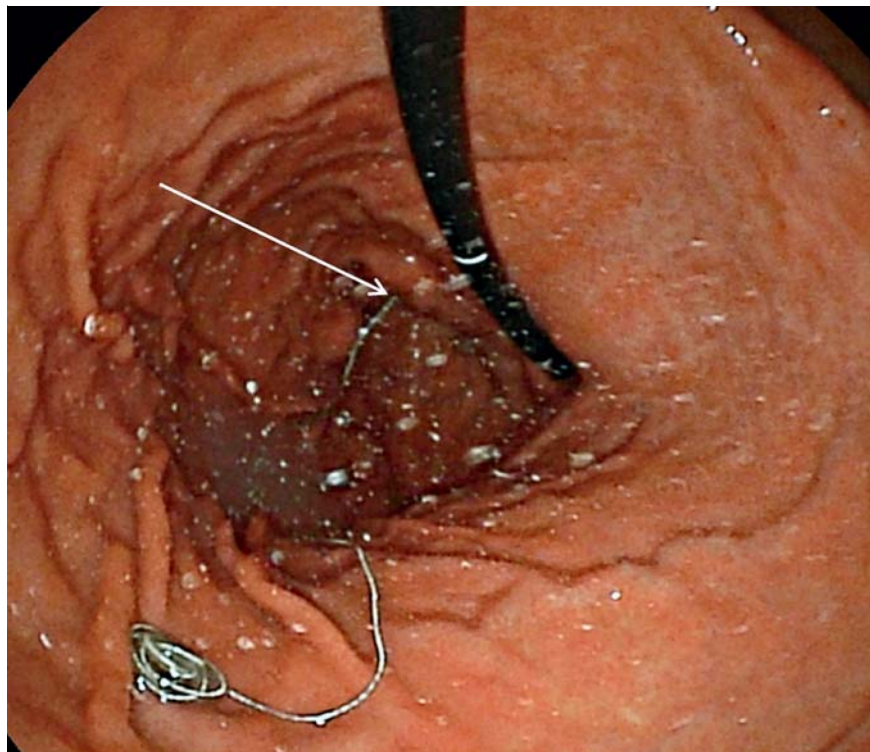
## Coil valve syndrome: a rare complication of percutaneous transhepatic obliteration successfully treated by argon plasma coagulation and double-balloon endoscopy



► **Fig. 1** Cerecyte coil.

Percutaneous transhepatic obliteration (PTO) is now widely used for prophylactic treatment of gastric varices [1]. A straying coil tip in the stomach is sometimes reported as an adverse event [2,3], but there have been no reports of one reaching the small intestine from the stomach. In this case, the migrated coil tip with food residue was shaped like a ball and passed into the jejunum, causing a phenomenon resembling ball valve syndrome [4].

A 70-year-old woman was admitted with epigastric pain. She had been treated for gastric varices by PTO with coils (► **Fig. 1**) 4 years earlier. One of these had migrated into the stomach asymptotically 1 year after PTO (► **Fig. 2**) and had been carefully monitored. Esophagogastroduodenoscopy on admission revealed the coil extending through the stomach and hooking into the mucosa at the angular portion of the stomach (► **Fig. 3**). Abdominal computed tomography revealed that the coil tip was now in the jejunum (► **Fig. 4**). Because of the risks of ulceration, perforation, or intussusception, we decided to remove it. Oral double-balloon enteroscopy (DBE) detected the coil tip enveloped by food residue in the jejunum; we carefully grasped it using forceps and pulled it back into the stomach. At first, we failed to cut the coil



► **Fig. 2** Endoscopic view of coil used to treat gastric varices, migrating from the fornix of the stomach (arrow).

wire using a scissor-type electrical knife and loop cutter, but we finally succeeded in cutting it using argon plasma coagulation (APC) (► **Video 1**). There were no adverse events during this procedure and the patient's symptoms improved. The recovered coil was an 82-cm cerecyte coil. It was only possible to cut it using APC because the coil wire had unraveled and lengthened (► **Fig. 5**). Compared with radiologists, few gastroenterologists know about migrated PTO coils and their characteristics.

This case shows a rare complication of PTO that was successfully treated by APC and DBE. We propose to describe this "coil valve syndrome" as "ball valve-like syndrome due to deviated coil."

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► **Fig. 3** Endoscopic view of a migrated coil biting into the mucous membrane at the angular portion of the stomach.



▶ **Video 1** “Coil valve syndrome”: a rare complication of percutaneous transhepatic obliteration for gastric varices that was successfully treated by argon plasma coagulation (APC) and double-balloon endoscopy (DBE).

## Corresponding author

**Koji Nagaike, MD**

Department of Gastroenterology and Hepatology, Suita Municipal Hospital, 5-7 Kishibeshinmachi, Osaka 564-8567, Japan

Fax: +81-6-63805825

nagaike.koji@gmail.com

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▶ **Fig. 4** Computed tomography (CT) confirmed that the end of the coil was in the jejunum.



▶ **Fig. 5** The recovered unraveled 82-cm cerecyte coil.

## CORRECTION

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In the above-mentioned article the name of the author Yuichi Yoshida has been corrected.

This was corrected in the online version on May 27, 2019.

## Competing interests

None

## The authors

**Koji Nagaike<sup>1</sup>, Shiro Hayashi<sup>2</sup>, Kengo Nagai<sup>1</sup>, Hirokazu Sasakawa<sup>1</sup>, Kiyonori Yuguchi<sup>1</sup>, Yuichi Yoshida<sup>1</sup>, Masafumi Naito<sup>1</sup>**

<sup>1</sup> Department of Gastroenterology and Hepatology, Suita Municipal Hospital, Osaka, Japan

<sup>2</sup> Department of Gastroenterology and Internal Medicine, Hayashi Clinic, Osaka, Japan