# *Surgical treatment of pneumatosis cystoides intestinalis with pneumoperitoneum secondary*

*Yoshihiro Okuda[1], Shugo Mizuno[2], Taihei Koide[1], Makoto Suzaki[1], Shuji Isaji[2]*

*[1]Department of Surgery, Kinan Hospital, Mie, Japan*
*[2]Department of Hepatobiliary Pancreatic and Transplant Surgery, Mie University Graduate School of Medicine, Mie, Japan*

***Cite this article as:*** *Okuda Y, Mizuno S, Koide T, Suzaki M, Isaji S. Surgical treatment of pneumatosis cystoides intestinalis with pneumoperitoneum secondary to sigmoid volvulus following one year of follow-up. Turk J Gastroenterol 2018; 29: 131-3.*

We read with great interest the article by Kaya B. et al. (1) (Turk J Gastroenterol 2014; 25: 426-8) entitled "Pneumatosis cystoides intestinalis mimicking acute abdomen". The authors reported a case of pneumatosis cystoides intestinalis (PCI) with pneumoperitoneum. They insisted that uncomplicated PCI can be safely managed conservatively but that bowel necrosis, perforation, or persistent obstruction should be treated with surgery. We agree with their strategy for treating PCI, but little is known about long-term outcomes after conservative therapy. We present a case of PCI with pneumoperitoneum secondary to sigmoid volvulus following one year of follow-up.

**Figure 1.** Images at the incidentally diagnosed as PCI when the patient suffered from acute pyelonephritis: Abdominal X ray showing a dilated colon and numerous cystic gas
PCI: pnematosis cystoides intestinalis

A 91-year-old female visited our hospital with complaints of high fever and abdominal pain. She was diagnosed as having acute pyelonephritis and PCI, which was incidentally diagnosed in the computed tomography (CT) scan that revealed a dilated colon and numerous cystic gas (Figure 1,2). Acute pyelonephritis improved with conservative therapy using antibiotics, and PCI disappeared. Then, she was followed up as an outpatient. Thirteen months later, she presented to our hospital again with complaints

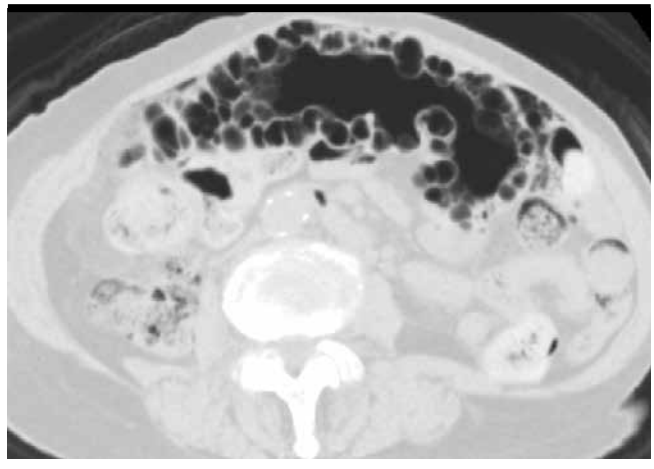

**Figure 2.** Images at the incidentally diagnosed as PCI when the patient suffered from acute pyelonephritis: CT scan showing a dilated sigmoid colon and multiple gas-filled cysts localized in the dilated intestinal wall
PCI: prematosis cystoides intestinalis; CT: computed tomography

*This study was presented at the 78th Annual Congress of Japan Surgical Association, November 2016, Tokyo, Japan*

*Address for Correspondence:* ***Shugo Mizuno*** *E-mail:* ***mizunos@clin.medic.mie-u.ac.jp***
*Received:* ***August 27, 2017*** *Accepted:* ***September 7, 2017***

*DOI:* ***10.5152/tjg.2018.17519***

**Figure 3.** Images of sigmoid volvulus with pneumatosis cystoids intestinalis 13 months after the initial diagnosis: Abdominal X ray showing dilatation of the sigmoid colon

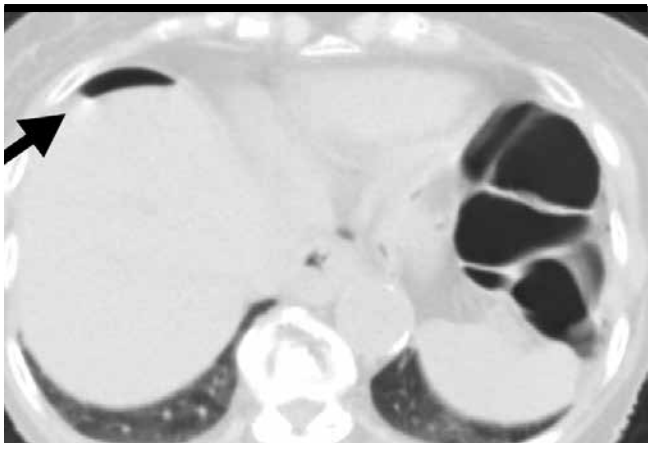

**Figure 4.** Images of sigmoid volvulus with pneumatosis cystoids intestinalis 13 months after the initial diagnosis: A CT scan showing pneumoperitoneum at the surface of the liver (black arrow)

of remarkable abdominal distention and lower abdominal pain. Laboratory data revealed mild inflammatory changes (WBC count: 10800/mm$^3$, CRP level: 4.79 mg/dL). An abdominal CT scan demonstrated a remarkably dilated

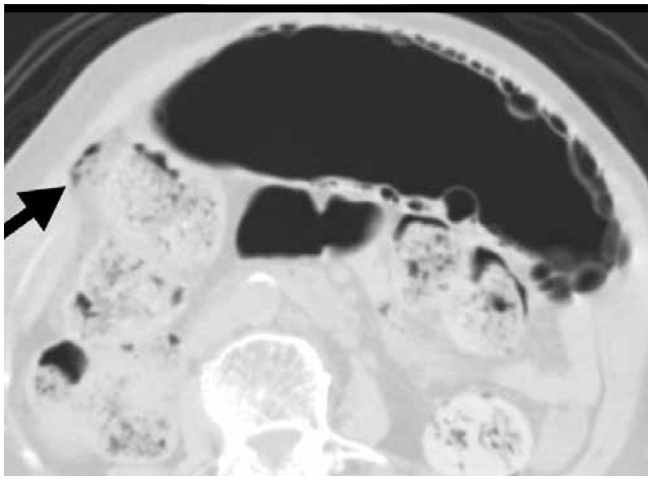

**Figure 5.** Images of sigmoid volvulus with pneumatosis cystoids intestinalis 13 months after the initial diagnosis: A CT scan showing a grossly dilated sigmoid colon with intramural gas and pneumoperitoneum (black arrow)

**Figure 6.** A foamy and brittle area was detected in a part of protruded lesions, and it was supposed to be the leakage point of free air in the abdominal cavity

sigmoid colon, multiple gas-filled cysts localized in the dilated intestinal wall, and diffuse pneumoperitoneum (Figure 3-5). She was diagnosed as having recurrent PCI of the sigmoid colon, sigmoid volvulus, and perforation of the sigmoid colon, and she underwent emergency laparotomy. A small amount of serous ascites was seen in the abdominal cavity. The sigmoid colon was remarkably dilated and twisted at the point of the rectosigmoid. A foamy and brittle area was detected in a part of protruded lesions,

**Figure 7.** The mucosa of the resected specimen revealing a sporadic, round, smooth, elevated lesion

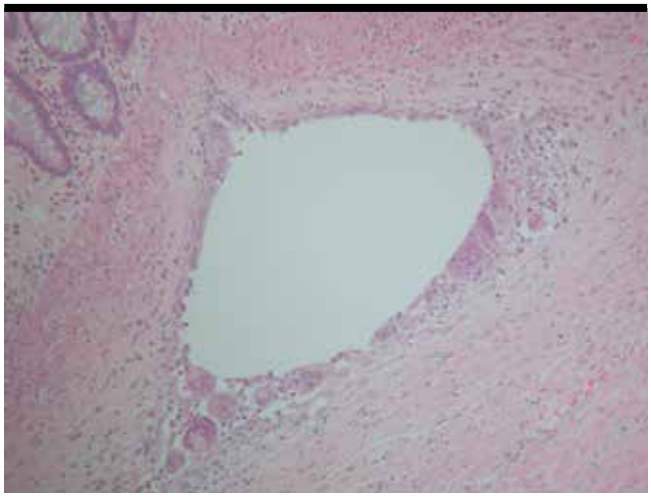

**Figure 8.** Multinucleated giant cells were seen beside the cysts. H&E: 100×

and it was supposed to be the leakage point of free air in the abdominal cavity (Figure 6). The protruded lesions were localized only in the dilated sigmoid colon, and ischemic changes were detected in the dilated intestinal wall. After untwisting, the sigmoid colon was resected with margins of 2 cm at the undilated colon, and end colostomy was also performed. Her postoperative course was uneventful. The mucosa of the resected specimen revealed a sporadic, round, smooth, elevated lesion (Figure 7). The gross appearance of the resected specimen revealed the presence of multiple intramural gas-filled cysts. Pathological findings confirmed PCI showing multiple gas-filled cysts in the submucosa and multinucleated giant cells beside the cysts (Figure 8).

Several reports have recommended that asymptomatic PCI should be conservatively treated with medical therapy (2). PCI can represent a life-threatening condition in some cases, and the overall mortality rate has been reported to be 20% (3). When patients with PCI are treated without surgical intervention, they have to be carefully followed up and attention should be paid to likelihood of PCI recurring.

***Informed Consent:*** Informed consent was obtained from patients' family who participated in this study.

***Peer-review:*** Externally peer-reviewed.

***Author contributions:*** Concept - Y.O., S.M.; Design - Y.O., S.M.; Supervision - S.I.; Resource - Y.O.; Materials - Y.O.; Data Collection and/or Processing - Y.O.; Analysis and/or Interpretation - Y.O., S.M.; Literature Search - Y.O., S.M.; Writing - Y.O., S.M.; Critical Reviews - T.K., M.S.

***Conflict of Interest:*** No conflict of interest was declared by the authors.

***Financial Disclosure:*** The authors declared that this study has received no financial support.

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