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Case Report

Intestinal Pneumatosis in Which CT Colonography Was of Significant Diagnostic Value: Case Report

Ryu Shimada[1], Tamuro Hayama[1], Norihito Yamazaki[2], Takuya Akahane[1], Atushi Horiuchi[1], Hajime Shibuya[1], Hideki Yamada[1], Soichiro Ishihara[1], Keijiro Nozawa[1], Keiji Matsuda[1], Toshiaki Watanabe[1]

[1]*Department of Surgery and* [2]*Department of Radiology, Teikyo University School of Medicine, Tokyo, Japan*

Intestinal pneumatosis refers to the presence of gas in the gastrointestinal wall. It is often difficult to clinically differentiate this condition from gastrointestinal perforation, sometimes resulting in emergency surgery. Imaging studies are important to establish the differential diagnosis. However, there have been few studies showing the efficacy of computed tomography (CT) colonography in diagnosing pneumatosis. We report a case of intestinal pneumatosis in which CT colonography was of significant diagnostic value. A 43-year-old man was referred to our hospital for a detailed investigation of multiple submucosal tumor-like lesions associated with multiple pneumatosis from the cecum to the ascending colon. These lesions were revealed by colonoscopy performed in another hospital on May 21, 2008. Abdominal 3-dimensional CT showed multiple pneumatic lesions from the cecum to the ascending colon, and the patient was diagnosed as having intestinal pneumatosis. The patient is being followed conservatively because he is asymptomatic.

Key words: Pneumatosis – Intestinal pneumatosis – Colonograpy – CT colonography – Diagnosis

Intestinal pneumatosis is an affection characterized by the presence of gas in the gastrointestinal wall. The differential diagnoses include gastrointestinal polyposis, lymphoid polyposis, lymphangioma, and intraperitoneal cyst.[1–5] Subserosal pneumatosis ruptured in the peritoneal cavity manifests as free air, and differentiation from gastrointestinal perforation is challenging.[6,7] We report a case of intestinal pneumatosis in which computed tomography (CT) colonography was of significant diagnostic value.

Reprint requests: Toshiaki Watanabe, MD, PhD, Department of Surgery, Teikyo University School of Medicine, 2-11-1 Kaga, Itabashi-ku, Tokyo 173-8605, Japan.
Tel.: +81 3 3964 1231; Fax: +81 3 5375 6097; E-mail: toshwatanabe@yahoo.co.jp

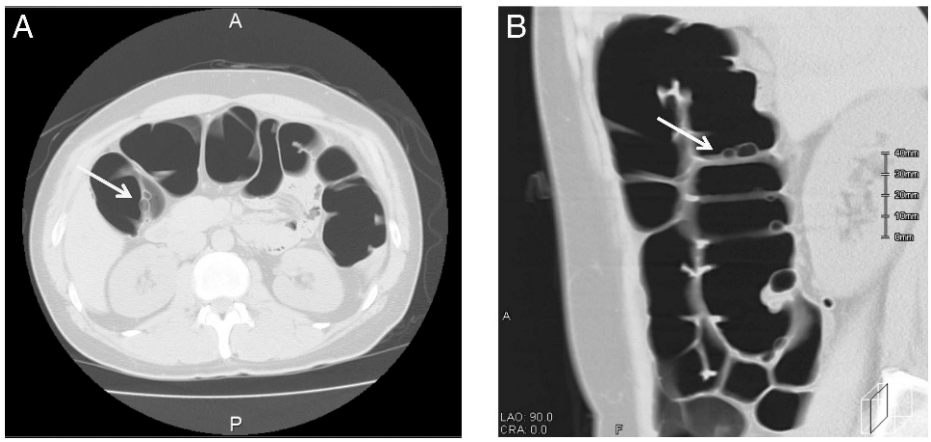

Fig. 1 Air CT. (A) Multiple pneumatosis-like changes are observed along the transverse colon wall (arrow). (B) A longitudinal slice. Pneumatosis-like changes are observed at the same site.

Case Report

A 43-year-old man was referred to our hospital for a detailed evaluation of multiple submucosal tumor-like lesions from the cecum to the ascending colon. These lesions were revealed by colonoscopy performed in another hospital in May 2008. On arrival, the patient's body temperature was 36.3°C, blood pressure was 118/60 mmHg, and pulse rate was 78/min. The patient was asymptomatic, and hematologic parameters of inflammatory reaction were within the normal range. Abdominal CT (Fig. 1) and CT colonography (Fig. 2) showed multiple pneumatic lesions from the cecum to the ascending colon, and colonoscopy showed pneumatosis-like protrusions from the cecum to the ileocecum (Fig. 3). Endoscopic ultrasonography revealed a hypoechoic lesion with an acoustic shadow in the submucosa (Fig. 3). Based on these findings, the patient was diagnosed as having intestinal pneumatosis.

The patient is being followed conservatively and undergoes colonoscopy every 6 months because of the absence of symptoms.

Discussion

The possible causes of intestinal pneumatosis, a disease with cystoid pneumatosis in the gastrointestinal wall, include bacterial infection, instrumentation, neoplasm, and nutritional chemistry.[8] Common symptoms are often minimal and include diarrhea and abdominal distension. Examination findings include Chilaiditi sign on radiologic examination,

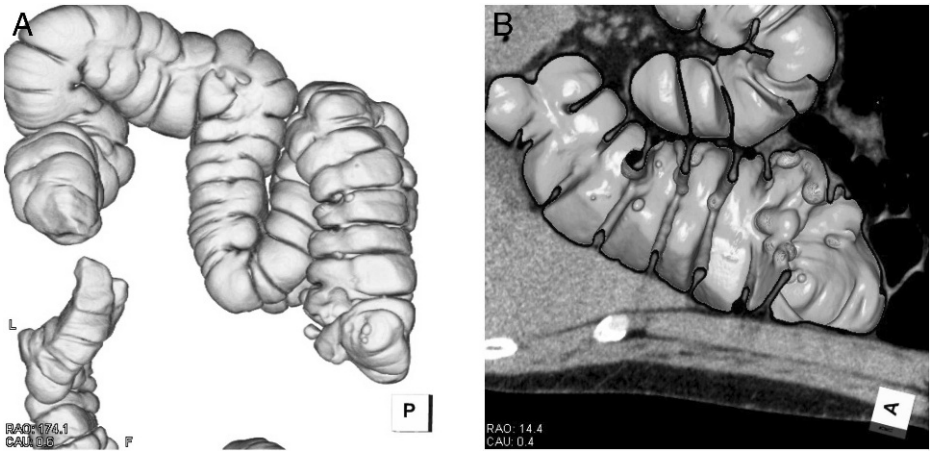

Fig. 2 CT colonography. (A) Multiple pneumatic lesions from the ascending colon to the transverse colon are observed. (B) Multiple pneumatic lesions in the ascending colon are observed.

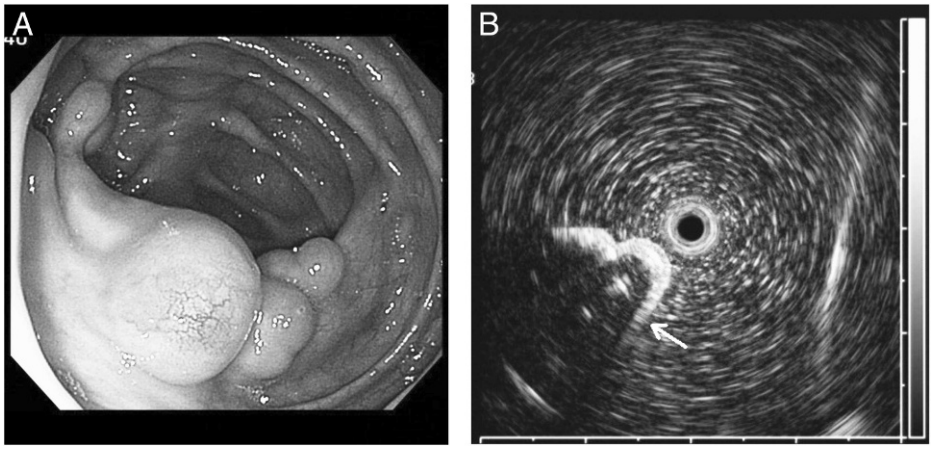

Fig. 3 Colonoscopy. (A) Multiple soft hemispheric submucosal tumor-like protrusions are observed. (B) Endoscopic ultrasonography showed a hypoechoic lesion with an acoustic shadow in the submucosa.

round lucency on gastrointestinal series, and endoscopic and abdominal CT findings.[9]

CT colonography is a method in which CT images are obtained after transanal air injection (carbon dioxide or room air) and converted into 3-dimensional images. Searching in PubMed, 11 results are found for the terms pneumatosis cystoides and colonography, but only 4 of them describe the effectiveness of colonography. Differentiation from gastrointestinal perforation, which requires emergency surgery, is a clinical problem because almost all cases of intestinal pneumatosis resolve after conservative follow-up.[10,11] In such cases, CT colonography, which is less invasive than other lower gastrointestinal examinations, such as endoscopy, is expected to improve the accuracy of the diagnosis and reduce the number of unnecessary surgeries.

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