

# Phlebosclerotic Colitis Associated with Long-term Use of a Chinese Herbal Medicine Containing Gardenia Fruit

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An 84-year-old Japanese woman presented to the emergency department with a 1-day history of vomiting and right lower quadrant abdominal pain. She had been taking furosemide 80 mg/day and spironolactone 50 mg/day for generalized edema secondary to nephrotic syndrome. She had also received therapy for Alzheimer's dementia. Two days earlier, medication dosage was increased; however, she became drowsy and had insufficient oral intake. A flat film of the abdomen showed significant gaseous distention in the left quadrant and calcification in the right upper quadrant (Figure 1). Non-enhanced computed tomography revealed calcification of the mesenteric veins and thickening of the wall of the ascending colon (Figure 2). A diagnosis of colonic obstruction due to phlebosclerotic colitis was made. At presentation, laboratory evaluation showed elevated serum creatinine and serum uric acid levels at 1.79 (range 0.4-0.7) mg/dl and 13.6 (range 2.3-7.0) mg/dl, respectively. The symptoms disappeared within 2 days after the initiation of parenteral nutrition and discontinuation of diuretic therapy. Ten days later, her serum creatinine level normalized, and no edema was observed. Furthermore, the decreased dosage of psychotropic medications led to good awakening and recovery of the oral intake.

Phlebosclerotic colitis is characterized by a chronic ischemic large-bowel lesion caused by impaired perfusion because of mesenteric vein sclerosis.<sup>1,2</sup> Many studies have reported an association between phlebosclerotic colitis and Chinese herbal medicines, especially formulas containing gardenia fruit for a long period (e.g., several years to several decades).<sup>1,2</sup> The main constituent of gardenia fruit is geniposide.<sup>1,2</sup> The reaction of genipin, an intestinal bacterial metabolite of geniposide, causes fibrous thickening and mesenteric vein wall calcification.<sup>1,2</sup> No diagnostic criteria have been established for phlebosclerotic colitis. Therefore, the diagnosis is based on radiological findings. Abdominal pain (on the right side), diarrhea, nausea, and vomiting are the most common

symptoms.<sup>1,2</sup> The treatment strategy is determined individually.<sup>2</sup> The discontinuation of the problematic medication is important to prevent disease progression.<sup>1,2</sup> Although patients without or with mild symptoms can be treated conservatively, severe cases complicated by persistent colonic obstruction or perforation require surgical interventions.<sup>2</sup>

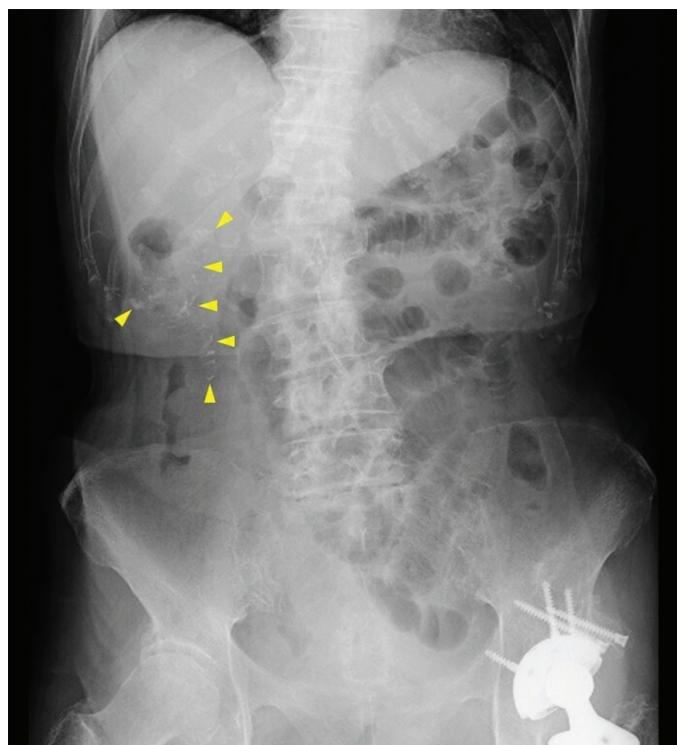


FIG. 1. Abdominal radiography showing significant gaseous distention in the left quadrant and calcification in the right upper quadrant (arrowheads).



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Received: July 05, 2022 Accepted: August 18, 2022 Available Online Date: September 09, 2022 • DOI: [10.4274/balkanmedj.galenos.2022.2022-7-15](https://doi.org/10.4274/balkanmedj.galenos.2022.2022-7-15)

Available at [www.balkanmedicaljournal.org](http://www.balkanmedicaljournal.org)

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Cite this article as:

Kajihara Y. Phlebosclerotic Colitis Associated with Long-term Use of a Chinese Herbal Medicine Containing Gardenia Fruit. *Balkan Med J*; 2022; 39(5):376-7.

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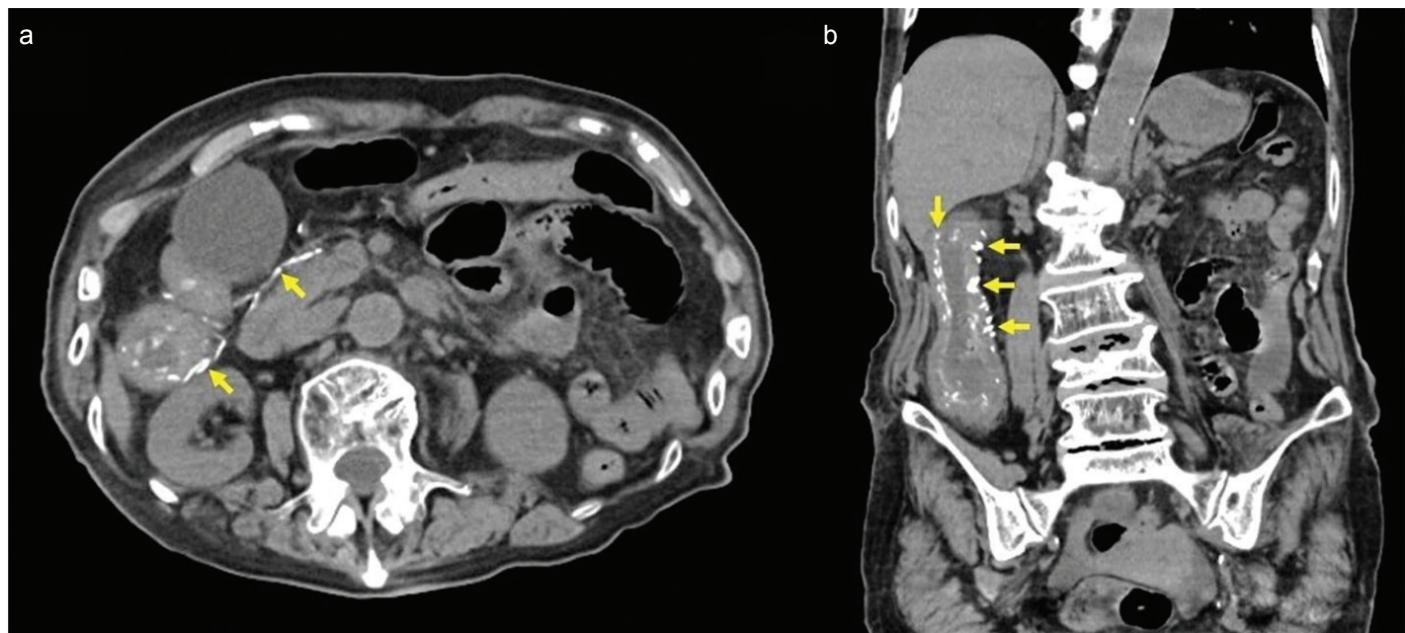


FIG. 2. Non-enhanced computed tomography revealing calcification of the mesenteric veins (arrows) and thickening of the wall of the ascending colon (a, axial view; b, coronal view).

In the present case, Qing Fei Tang (Seihaito in Japanese, a Chinese herbal medicine) had been administered for chronic sinusitis for 20 years. This gardenia fruit-containing product can cause mesenteric venous calcification. The medicine was discontinued 4 months previously because abdominal pain and diarrhea arose. However, the calcification remained even after its discontinuation. Dehydration owing to insufficient fluid intake and high-dose diuretics also impaired mesenteric perfusion leading to phlebosclerotic colitis. Clinicians should be cautious of phlebosclerotic colitis in patients with current and past use of a Chinese herbal medicine containing gardenia fruit.

**Informed Consent:** Written consent for publication was obtained from the patient.

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