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Allergy-induced urticaria of the colon

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ABSTRACT

This article reports 2 adult patients who had developed an acute allergic reaction to food ingredients or medications, respectively. Both patients presented with concurrent urticaria of the skin and colon. The latter finding appeared as numerous raised plaques of the colonic mucosa on radiographic and computed tomography (CT) of the abdomen. The urticarial lesions affecting the skin and large bowel resembled each other and resolved after treatment with antihistamines. Pertinent clinical data and previously published cases of this unusual entity are briefly reviewed.

1. Introduction

Urticaria is a common manifestation of an allergic reaction, and about 10% to 20% of the general population will encounter it during their lifetime [1–3]. Although the urticarial lesions or hives are usually localized to the skin, they may also involve other sites such as the lips, tongue, throat, ears, and rarely the internal organs [2–4]. An epidemiological study found that extracutaneous symptoms occur in 39.4% of patients with urticaria [3].

Urticaria of the colon has been reported in a few published cases [5–9]. This article presents two additional patients who had systemic allergic reactions with cutaneous hives, and in whom the concurrent development of urticaria of the colonic mucosa was demonstrated on radiographs and computed tomography (CT) of the abdomen.

2. Case reports

Patient 1. A 42-year-old woman presented to the Emergency Department with an acute onset of nausea, vomiting, abdominal pain and distention. She had also developed itching and hives mainly over the face, upper body and arms. These symptoms had started shortly after eating dinner, and presumed to be caused by an allergic reaction to the ingested food or its artificial additives. Laboratory tests demonstrated a WBC of 6700 with 5% eosinophils, resulting in an absolute eosinophils count (AEC) of 335 cells/microL (normal: 30–350). The slightly elevated levels of glucose and sodium were attributed to the non-fasting postprandial state.

Abdominal radiograph demonstrated a gas-filled colon with numerous raised plaques of its mucosal lining (Fig. 1A). Following

administration of an antihistamine and placement of a nasogastric tube, a repeat abdominal radiograph was obtained. It showed a decreased size and number of the colonic mucosal lesions (Fig. 1B). CT of the abdomen performed the next morning revealed clusters of small mucosal elevations in the gas-filled parts of the colon (Fig. 1C). She had a complete resolution of urticaria and abdominal symptoms within 24 h of her initial presentation.

Patient 2. This 56-year-old man had undergone radical cystectomy and construction of an orthotopic neobladder with an ileal pouch because of an invasive transitional cell carcinoma of the bladder. He had a history of allergy to penicillin and shellfish, but had tolerated the preoperative chemotherapy without any complications.

While recovering from a mild postoperative ileus he developed a fever, cramping abdominal pain and diarrhea. After receiving a broad-spectrum antibiotic and opioid pain medication, he complained of pruritus and soon developed diffuse prominent hives of his body and extremities. Radiograph of the abdomen demonstrated a cobblestone pattern of the mucosa in the gas-filled right hemi-colon (Fig. 2). There were numerous round elevated plaques, each measuring about 5–10 mm in diameter and some of them appearing as thumbprints along the lateral wall of the ascending colon. These bleb-like lesions were quite similar in appearance when compared to the cutaneous hives. The patient was treated with antihistamines and steroids, resulting in a prompt and uneventful clearing of his skin and colonic urticaria.

3. Discussion

Patients with an acute allergic reaction may experience

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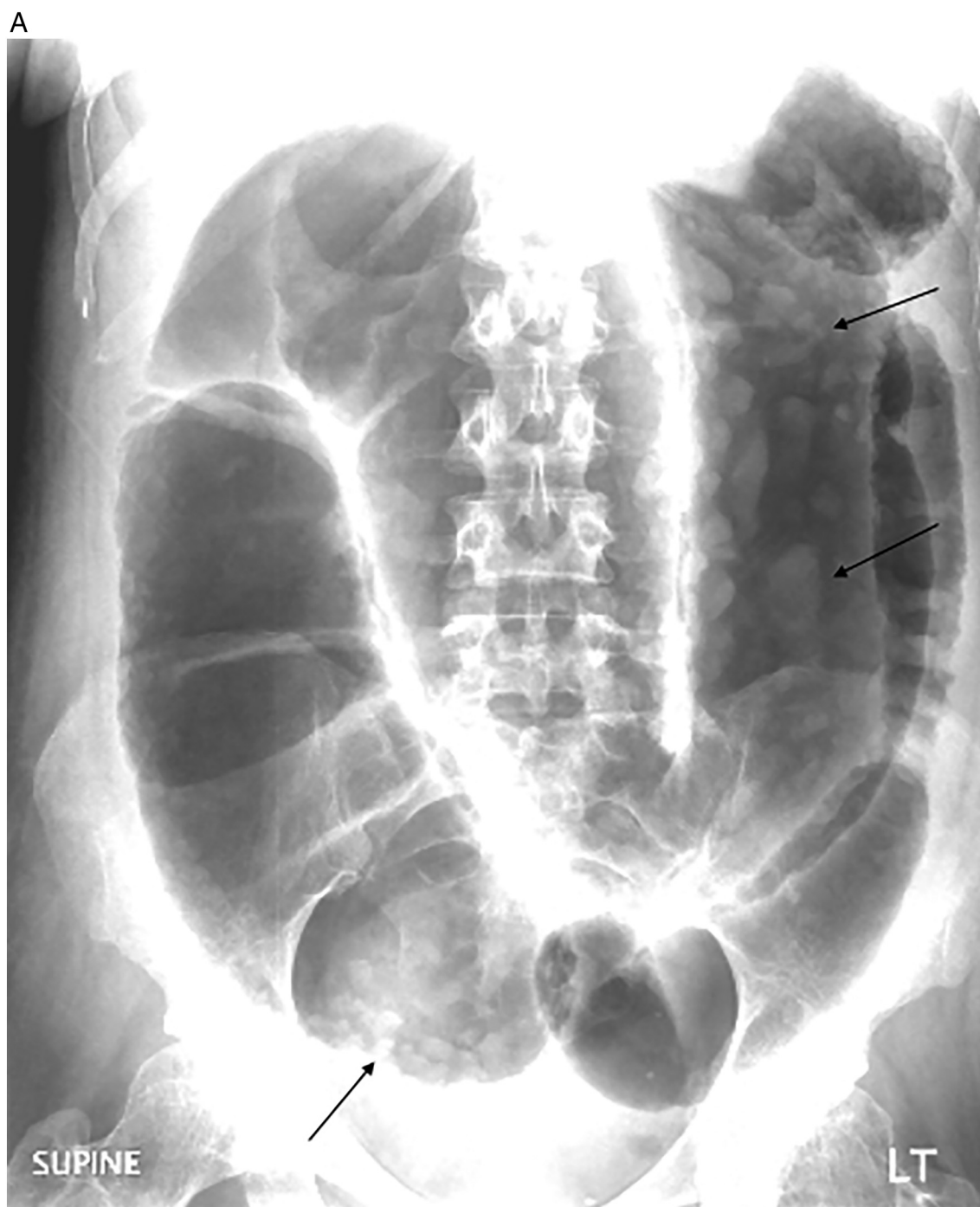


Fig. 1. *Patient 1.* A Radiograph of the abdomen shows numerous raised mucosal plaques in the gas-filled cecum and distal transverse colon (black arrows). B Repeat film after the placement of nasogastric tube and antihistamine medication demonstrates decreasing size and number of the urticarial lesions (white arrows). The close-up photo of the right axillary region (inset) shows the similarity of cutaneous and colonic hives. C Composite views of abdominal CT sections reveal clusters of nodular urticarial lesions covering the colonic mucosa (arrows).

gastrointestinal symptoms, such as nausea, vomiting, and abdominal pain [1,3,10]. There is also evidence for occasional involvement of the internal organs, mainly in cases of chronic or recurrent urticaria [4]. However, simultaneous development of acute urticaria of the skin and

mucosa of the colon as presented in our 2 patients is a highly unusual occurrence.

The initial report of a patient with urticaria of the colon appeared in a 1968 article by Clemett et al. [5]. They had detected a wide-spread

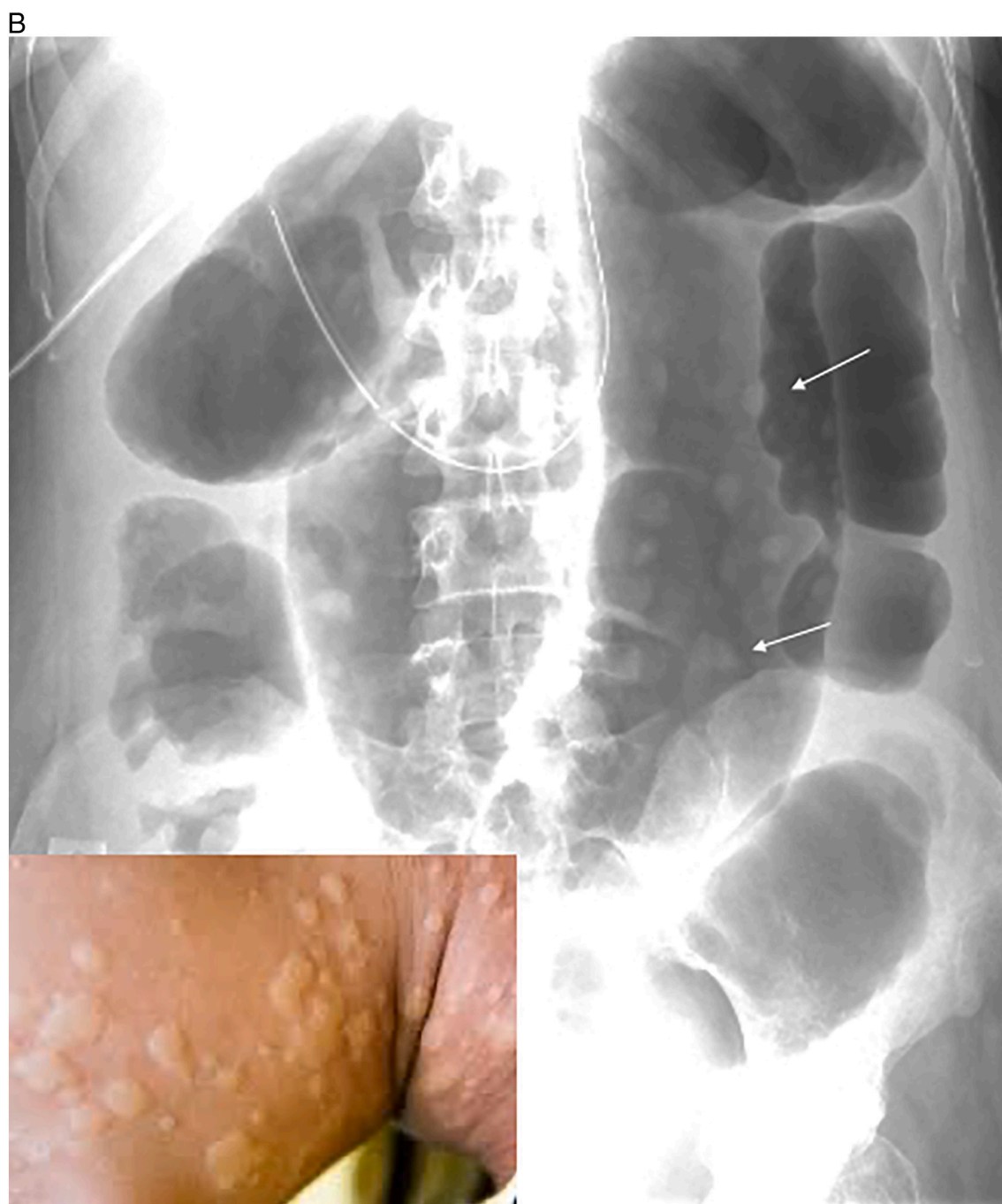


Fig. 1. (continued)

mucosal nodularity of the colon on barium enema examination of a patient with an allergic reaction to penicillin, who had presented with hives and diarrhea. The authors also described endoscopic visualization of urticaria of the gastric mucosa in one of their cases of mastocytosis

[5].

Berk and Millman [6] demonstrated a reticulated pattern of discrete plaques of the colonic mucosa on air contrast examination of a woman who did not have coexisting hives or eosinophilia. The patient died

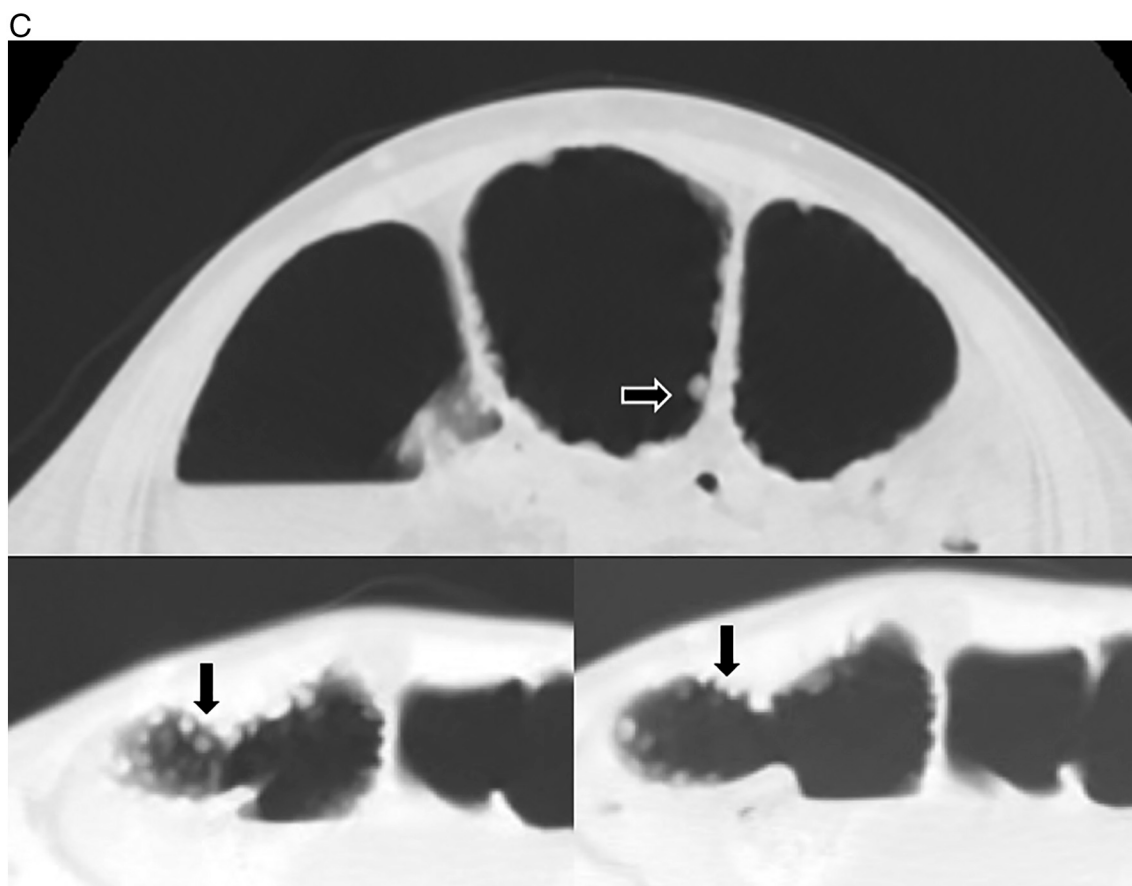


Fig. 1. (continued)

from an unknown hypersensitivity reaction and autopsy confirmed that the unusual mosaic pattern of the colonic mucosa was caused by submucosal edema.

Another case report illustrated the same pattern of polygonal plaques in the mucosa of a sigmoid volvulus [7]. Seaman and Clements in 1982 presented 6 patients with various non-allergic disorders in whom urticaria of the colon was seen on barium enema studies [8]. Therefore, these authors postulated that the distinctive mosaic pattern of raised plaques in the colon was caused by submucosal edema due to early ischemia of distended large bowel.

This concept was further supported by Greenberg and colleagues in a series of 3 patients [9]. They noted that the histopathological feature of urticaria consists of submucosal edema and cellular infiltrates, similar to the changes seen in the raised plaques and blisters causing thumbprints in the walls of ischemic colon. Since allergy-induced urticaria can be associated with angioedema in a more advanced phase, it is likely that the radiologic findings in our second patient represented this combination (Fig. 2). Furthermore, urticaria may present with a wide spectrum of appearances in the skin or colonic mucosa depending

on its underlying histopathology, as demonstrated in our two patients and several previously published cases [2,5–7,10].

A unique feature of the patients presented herein is the concurrent development of urticaria affecting the skin and colonic mucosa as the result of an acute allergic reaction to food ingredients or medications (Figs. 1 and 2). Furthermore, the CT image of colonic urticarial as clusters of nodular mucosal plaques has not been reported previously (Fig. 1C). It is also remarkable that the cutaneous and colonic lesions were very similar in appearance and promptly resolved after the administration of antihistamines. This is in contrast to most of the published cases whereby the radiological findings had been demonstrated in the absence of a history of allergy or coexisting urticaria of the skin [7–9]. Therefore, it is hoped that our observations and comments will provide clinical radiologists with an improved understanding of allergy-mediated mucosal abnormalities of the colon that can be recognized on imaging studies.

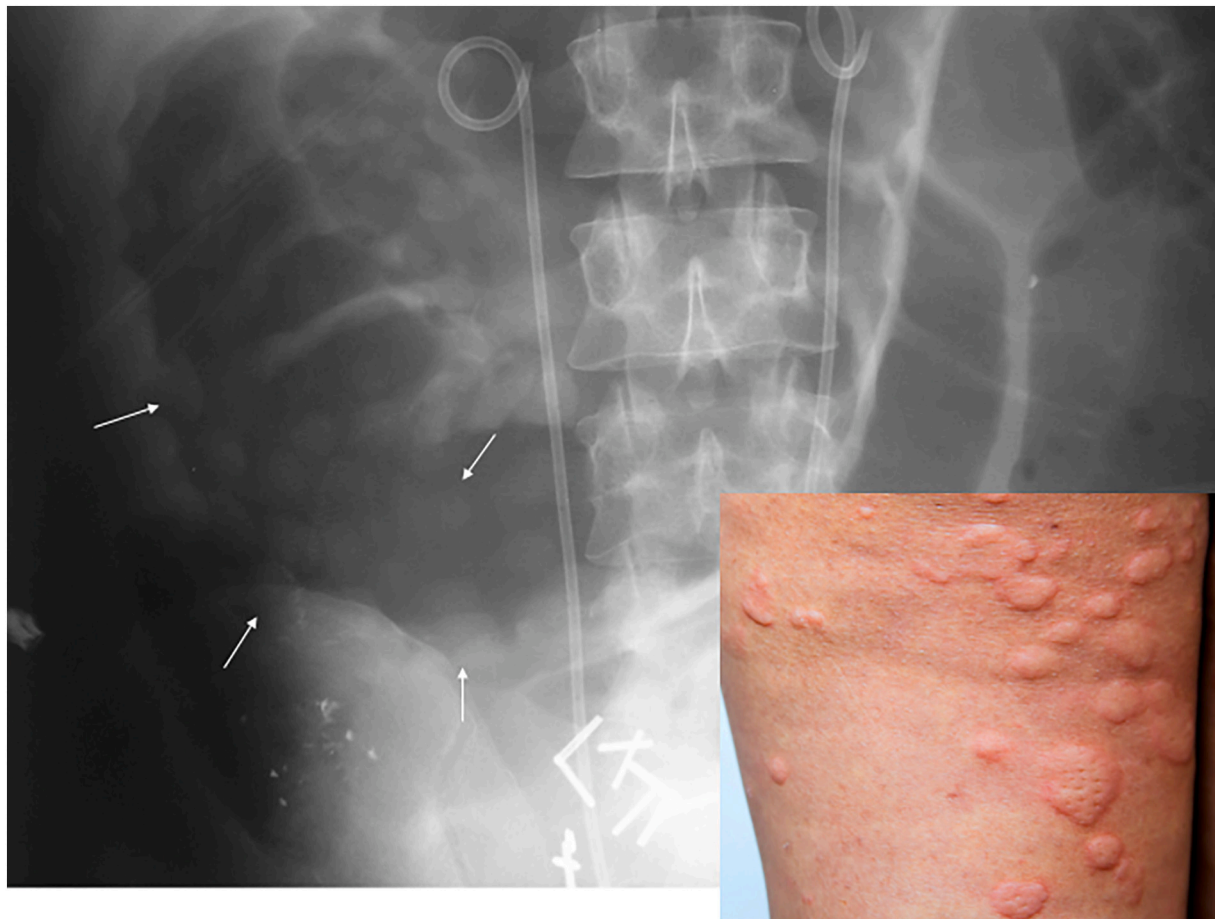


Fig. 2. Patient 2. Supine radiograph of the abdomen demonstrates a cobble-stone pattern of the mucosa caused by elevated round plaques in the right hemi-colon (arrows). The same lesions appear as thumbprints along the lateral wall of the ascending colon. A magnified photograph (inset) shows the concurrent urticaria on the skin of right leg.

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