

Clinical diagnosis

Case 98

4. Ingestion hernia due to rice cake

【Progress】

After taking CT, he confessed to us he ate a lot of rice cakes the night before without chewing. He was admitted to our hospital for severe abdominal pain. The following day, the degree of abdominal pain got abated. Five days later, he was discharged, being free from abdominal pain.

【Discussion】

The common obstructive site of ingestion hernia is distal ileum rather than duodenum and jejunum (1 - 6). This is simply because the lumen of ileum is narrow compared to duodenum and jejunum, and the motility field of ileum is narrower and the peristaltic movement is weaker in ileum than duodenum and jejunum. Further, the stagnant stay of food is more susceptible due to the presence of Bauhin valve of cecum. In our case, the occlusive site was also the distal ileum.

As the causative food responsible to ingestion ileus, various kinds of food are listed. Until 70ies, persimmon seed and kelp (snack or candy) were the high-incidence-causative food (1-4). In these days, shiitake mushroom, konjac, seaweed, fishbone, dentures, gastrolith and rice cake were getting increased (1-6). Poorly digestive food such as candy kelp can be causative for children. Aged persons without teeth or with dentures causing the bad alignment of teeth are risky for ingestion hernia. Our case had no special episodes of teeth but simply swallowed rice cake with least chewing. After all, swallowing large volume of food without chewing can be possible to occlude bowel lumen.

Ingestion ileus with rice cake causes severe pain, similar as strangulation hernia (4-6). Abdomen CT is easy and crucial to distinct between them. A specific CT finding of ingestion ileus is known as “small bowel fecus sign” which means bubbly mass and impaction (1, 3). However, this sign is not found in case of rice cake ileus. Rice cake itself appears as homogeneous high density lesions at the occlusion site. In the literature, CT values of rice cake are 124 to 206 HU (4-6). CT value of hematoma is mostly less than 100 HU. In our case, CT value of rice cake was 210 HU, compatible with rice cake, but not hematoma.

Because average Japanese have a habit of eating rice cake in New Year Days, patients with rice cake ileus usually present in January. Rice cake is starch itself. Starch has two components: amylopectin and amylose. Rice cake is made of 100% amylopectin while Japanese rice is made of 80% amylopectin and 20% amylose and Thailand rice is made of 100 % amylose (6). The reason why the density of rice cake is higher on CT than Japanese conventional rice, might be responsible to the greater concentration of amylopectin.

【Summary】

We present a fifty two-year-old male suffering from severe abdominal pain coming from midnight. Abdomen CT showed sub-ileus of small intestine due to homogeneous high density lesions at the occlusive site of the distal ileum. He swallowed rice cake with least chewing, implying diagnosis of intussusception caused by rice cake. It is borne in mind that rice cake appears as high density mass-lesion on CT, different from “small bowel fecus sign” of bubbly mass and impaction. Rice cake (sticky rice) is starch composed of 100% amylopectin which might contribute to appear high density on CT.

【References】

1. Velitchkov NG, et al. Ingested foreign bodies of the gastrointestinal tract: retrospective analysis of 542 cases. *World J Surg* 1996; 20: 1001-1005.
2. Izumi J, et al. Small Bowel Obstruction Caused by the Ingestion of a Wooden Toothpick: The CT findings and a Literature Review. *Intern Med*. 2017; 56(6): 657–660.
3. Sakamoto K, et al. A Case of Alimentary Ileus Resulting From a Spilled Bezoar *Nihonhukubu Kyokyuigaakai* 2010; 30: 945-947 (In Japanese)
4. Fujii M, et al. Multiple gastric ulcers caused by a rice cake as an intragastric foreign body. *J Gastroenterol* 2006; 41:282— 283
5. Miura T, et al. Rice cake ileus--a rare and ethnic but important disease status in east-southern Asia. *Intern Med* 2011; 50: 2737—2739
6. Oka A, et al. Small bowel obstruction and gastric ulceration resulting from rice cake ingestion —computed tomography diagnosis in eightpatients— (In Japanese)*Nisshousi* 2013; 110: 1804 – 1813

[back](#)

2018.3.28