

## Imaging diagnosis

### Case 369

#### 4. Dietary ileus

##### 【Progress】

She received laparotomy under diagnosis of small bowel obstruction. It revealed Shiitake ileus.

##### 【Discussion】

Laparotomy in this case was carried for small bowel obstruction due to intussusception. Operative findings revealed no evidence of intussusception but Shiitake ileus. The occlusive site of small bowel obstruction was depicted like that the most advanced portion with soft-tissue attenuation was covered with low attenuation ring on CT. Intussusception (invagination) is known to progress into the lumen with mesentery, indicating that the invaginated bowel be accompanied with mesentery inside. In our case, the most advanced portion at the occlusive site was accompanied with low signal attenuation outside, like a low attenuation cap, indicative of being different from intussusception.

It is reported that Shiitake is shown low attenuation: CT values of raw Shiitake are – 500, those of sauteed Shiitake, -300 to -200, and those of boiled Shiitake, 30 to 60. Raw Shiitake with CT value of -500 might include gas because the value of -500 indicates the range between gas and lipid (1-6). Sauteed Shiitake of -300 to -200 indicates to be lower than fat tissue of CT value -100 or lower (1).

Then, when Shiitake irrespective of raw or sauteed is not chewed but is swallowed as mass itself, Shiitake can be a cause of dietary ileus since it takes long time for digestion. As CT values of Shiitake are extremely low, it can make radiology interpreters mislead Shiitake low attenuation to mesentery low attenuation, inducing misdiagnosis of intussusception.

The values of CT are determined: CT values for air, -1000 and those for thickened pure calcification, + 1000. A CT image is created by white-black coloring with 16-degree gray scale. When abdomen CT focusing on liver is taken with level 30 and window 150, the component with CT values 180 or greater is expressed in pure white, while the component with CT values -120 or less is expressed in pure black. The component of CT values with -120 to + 180 is expressed using various 14-degree gray color.

In case of Shiitake small bowel obstruction, the occlusion site of Shiitake is depicted low attenuation on CT with level 30 and window 150 (1). As CT values of Shiitake irrespective of raw or sauteed, the occlusion site can be expressed as the same dark as lipid or air. Then it can lead to misinterpret low attenuation of Shiitake as lipid, inducing misdiagnosis of intussusception. In our case, the low attenuation surrounding soft tissue of occlusive site is judged as fat tissue of mesentery, leading misdiagnosis of small bowel intussusception.

## 【Summary】

We presented a seventy-two-year-old female with small bowel obstruction after Shiitake mushroom ingestion. Abdomen CT taken in a local hospital depict small bowel obstruction whose occlusive transition site of soft tissue attenuation is covered with ring-like low attenuation. The imaging diagnosis of the previous local hospital is small bowel intussusception. Laparoscopic findings revealed Shiitake mushroom ileus. It is borne in mind that CT values of raw Shiitake are -500, those of sauteed Shiitake, -200 to -300 and CT values of boiled Shiitake, 30-60. CT images of Shiitake ileus mimic those of small bowel intussusception.

## 【References】

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