

Imaging diagnosis

Case 422

3. Gall bladder volvulus

【Progress】

She received emergent surgical laparotomy that revealed gall bladder volvulus with partial necrosis.

【Discussion】

Gall bladder volvulus is caused by volvulus of cystic duct, inducing compressive occlusion of cystic artery and vein, and leading ischemic necrosis of gall bladder mural. Further, abdominal visceral pain brings out paralytic ileus in our case. We were unable to reach exact diagnosis of gall bladder volvulus, devoted to interpreting the occlusion site of small bowel obstruction but in vain. Operative findings revealed paralytic ileus and gall bladder volvulus with small necrosis.

Gall bladder volvulus rarely occurs with the incidence of 1: 366520 on one literature. For gall bladder volvulus, median age is 77 years, gender, female versus male is 4:1, indicative of being predominant occurrence in advanced women (1-3).

Gall bladder is fixed with gall bladder mesentery to liver. As time progress, gall bladder mesentery weakens, detaching gall bladder from liver, making gall bladder body free, inducing enabling to rotate (4,5). When rotating 180 degrees or greater, the word rotation is expressed to volvulus with ischemic damage. The symptoms of gall bladder volvulus are acute abdominal pain, associated with swollen gall bladder and mural thickening. These symptoms and signs mimic acute cholecystitis (1-5). The differences between cholecystitis and gall bladder volvulus are cystic duct whirling and swollen cystic duct.

The characteristics of gall bladder volvulus are swollen gall bladder, beak sign or triangular sign of gall bladder neck or cystic duct, and swirl sign of cystic duct (6). Then, imaging diagnosis of ultrasounds and CT, irrespective of non-contrast or contrast, is imperative to delineate them. Further, interpreters should be familiar with beak sign, triangle sign, and swirl sign for gall bladder volvulus. Preoperative diagnosis of gall bladder volvulus was low with less than 10 % in the past and rising at present to 17-26% (1-6). In fact, we were unable to reach gall bladder volvulus as preoperative diagnosis. While interpreting the image of this case, we concentrated on occlusive site of small bowel ileus, but in vain, since operative findings revealed no small bowel occlusion site. It was caused by paralytic ileus. We had found mural thickening of gall bladder neck, misinterpreting adenomyosis of gall bladder. We realized it was strange because we had not encountered a case with adenomyosis of gall bladder neck before. If we got acknowledged the characteristic of gall bladder volvulus, the exact imaging diagnosis would be possible.

【Summary】

We presented a ninety-five-year-old female with hypoxia and hypotension. Paralytic ileus and swollen gall bladder whose neck being triangular mural thickening or beak sign and swirl sign were depicted on axial, sagittal or frontal CT. It is borne in mind that although the differentiation between acute cholecystitis and gall bladder volvulus is difficult, swollen gall bladder with triangular mural thickening or beak sign and swirl sign warrants the diagnosis of gall bladder volvulus.

【References】

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