

Severe Fever with Thrombocytopenia Syndrome Mimicking Acute Appendicitis

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A 58-year-old previously healthy woman living in Gyeongsangbuk-do rural area complained of fever, periumbilical abdominal pain, and diarrhea for 7 days. On physical examination, both of her lower legs had discrete erythematous papules with no eschar. She had no abdominal tenderness. However, her laboratory data revealed leukopenia (total white blood cell count: 1,390/ μ L, neutrophils/lymphocytes: 58.1%/35%) and thrombocytopenia (platelet count: 54,000/ μ L), as well as elevated serum levels of aspartate aminotransferase (112 U/L; normal range: \leq 32 U/L), alanine aminotransferase (37 U/L; normal range: \leq 33 U/L), amylase (67 U/L; normal range: 28-110 U/L), lipase (69 U/L; normal range: 13-60 U/L), c-reactive protein (1.57 mg/dL; normal range: $<$ 0.5 mg/dL), and ferritin (1,065 ng/mL; normal range: 13-150 ng/mL). Meanwhile, additional laboratory findings including *Orientia tsutsugamushi*, *Leptospira*, and *Hantaan* antibodies were all negative. *Clostridioides* toxin assays were also negative. Abdominal computed tomography (CT) scanning revealed appendiceal wall enhancement, with no surrounding periappendiceal fat infiltration or bubbles of free air (Fig. 1A, B). Additionally, ultrasonography showed an increased appendiceal diame-

ter, indicating possible acute appendicitis. The following day, real-time reverse transcription polymerase chain reaction confirmed severe fever with thrombocytopenia syndrome (SFTS) (M segment Glycoprotein N/C [Gn/Gc]: 31.63 cycles [normal range: \leq 35 cycles], S segment nucleocapsid protein N/nonstructural protein: 33.86 cycles [normal range: \leq 35 cycles]). No other evidence of infection was found. To treat neutropenic fever, we administered empirical intravenous antibiotics (cefepime and metronidazole). Typhlitis was ruled out, considering that the patient had no hematologic malignancy diseases or cytotoxic chemotherapy history. On hospitalization day 3, fever and abdominal pain subsided. On hospitalization day 7, the laboratory findings were normal, and a follow-up abdominal CT showed no evidence of appendicitis (Fig. 1C, D). Bacterial cultures, which were conducted on hospitalization days 1 and 3, were all negative. Thus, on hospitalization day 8, antibiotic administration was stopped. On hospitalization day 14, she was finally discharged.

Although SFTS varies in terms of clinical presentation and gastrointestinal symptoms are commonly associated with SFTS manifestations,¹ nothing has been found to date

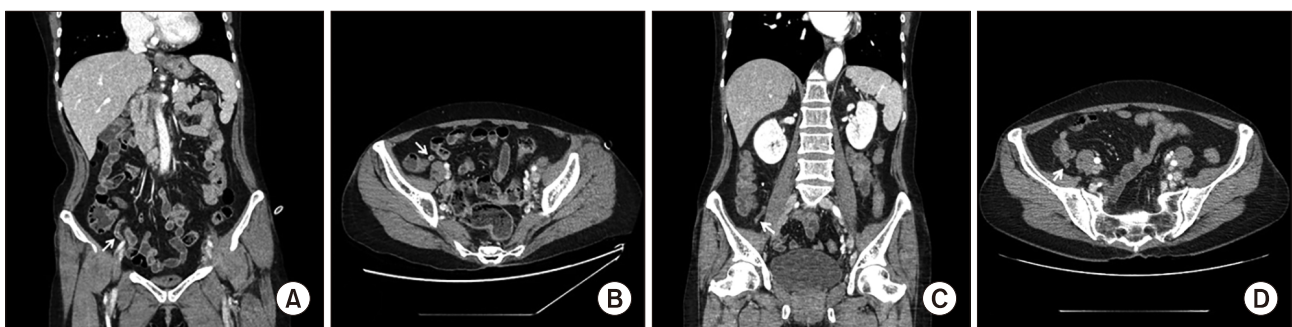


FIG. 1. Abdominal computed tomography (on hospitalization day 1) images of a fluid-filled, dilated appendix with prominent mural enhancement, indicating inflammation, but no periappendiceal fat infiltration (white arrows). (A) Coronal view. (B) Axial view. Abdominal computed tomography (on hospitalization day 7) showed no evidence of appendix inflammation (white arrows). (C) Coronal view. (D) Axial view.

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that shows that SFTS can mimic acute appendicitis. However, viral infection of the appendix could cause mucosal ulceration or lymphoid hyperplasia of the appendix with resultant obstruction, followed by bacterial infection.² Cox-sackievirus, measles virus, and cytomegalovirus have been associated with appendicitis.³ The insight into whether appendicitis is linked to the SFTS virus or an accompanying disease remains unclear. However, considering the symptom development period, the blood test findings during the hospital visit and the possibility of appendicitis caused by viral infection, the appendicitis associated with the SFTS virus was considered as a priority in the current report. Acute appendicitis-like features caused by SFTS could be one of the pathologic mechanisms. When patients are diagnosed with SFTS with major gastrointestinal symptoms, we should suspect SFTS mimicking acute appendicitis.

The Institutional Review Board (IRB) of Kyungpook national University Medical Center (IRB No. 2020-1-034) ap-

proved this study and waived the informed consent.

CONFLICT OF INTEREST STATEMENT

None declared.

REFERENCES

1. Yu XJ, Liang MF, Zhang SY, Liu Y, Li JD, Sun YL, et al. Fever with thrombocytopenia associated with a novel bunyavirus in China. *N Engl J Med* 2011;364:1523-32.
2. Alder AC, Fomby TB, Woodward WA, Haley RW, Sarosi G, Livingston EH. Association of viral infection and appendicitis. *Arch Surg* 2010;145:63-71.
3. Pasticci MB, Corsi S, Spigarelli F, Correnti S, Francisci D, Castronari R, et al. Acute appendicitis due to Cytomegalovirus in an apparently immunocompetent patient: a case report. *J Med Case Rep* 2014;8:92.