

## Acute Abdomen: A Rare Presentation of Chickenpox

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**Introduction:** Infection with varicella-zoster virus (VZV) in healthy adults tends to be more severe. Antiviral medication (often prescribed for adults), is effective in reducing the severity of the disease and its complications. The most common and lethal complication of varicella is pneumonia. Treatment with antiviral drugs is generally advised within 24 to 48 hours after the rash onset.

**Case Presentation:** We report a 25-year-old woman with an unusual presentation of chickenpox just one month after her marriage. Unfortunately, the patient presented with acute abdomen and diagnosis was late. Treatment started 8 days after the beginning of the first sign, but she died because of hemorrhage and severe pneumonia.

**Conclusions:** Atypical chickenpox infections should be suspected in any patient who presents unexplained abdominal pain, fever, and dyspnea, even if cutaneous lesions are minimal. An early diagnosis can prevent a fatal outcome.

**Keywords:** Abdominal Pain; Chickenpox; Unusual Presentation

### 1. Introduction

Chickenpox or varicella is a highly contagious disease caused by the varicella-zoster virus, which produces blister-like eruptions, itching, and fever (1, 2). Chickenpox can be serious, especially in babies, adults, pregnant women, and people with impaired immune systems. It spreads easily from infected people to others who have never had chickenpox or received the chickenpox vaccine. Chickenpox spreads through air by speaking, coughing, or sneezing (3-5). It can also spread by touching or breathing in the virus particles that from chickenpox ruptured blisters.

The first symptoms of chickenpox usually develop about 14 to 16 days after contact with a patient. Most patients experience fever, decreased appetite, headache, cough, and sore throat. The itchy varicella rash usually appears on the first or second day after the initial symptoms. Chickenpox red spots usually go through all their stages in 1 or 2 days. These stages include blistering, bursting, drying and crusting over. New red spots will appear every day for up to 5 to 7 days.

It usually takes 10 to 14 days after the first symptoms before all blisters crusted over. This is when the person with chickenpox can return to school or work (1-5). Complications of varicella include skin and soft-tissue infections, pneumonia, hepatitis, fulminant liver failure with disseminated intravascular coagulation and gastrointestinal hemorrhage, and encephalitis. Other pathologic complications of VZV infection include thrombocytopenia, which causes coagulopathy and

hemorrhage, particularly when associated with severe hepatitis (6).

In immune-competent children with varicella, pneumonia is an uncommon complication, in contrast; pneumonia accounts for the majority of morbidity and mortality seen in adults. Varicella pneumonia typically develops 1 to 6 days after the rash with symptoms of progressive tachypnea, dyspnea, dry cough, and hemoptysis. Chest radiography reveals diffuse bilateral infiltrates, nodular and subsequently calcification. Intravenous acyclovir and supportive measures are recommended, but steroid treatment of varicella pneumonia is controversial. The most sensitive method for confirmation of varicella is polymerase chain reaction (PCR) to detect VZV in skin lesions. A positive IgM-ELISA result, although suggestive of a primary infection, does not exclude re-infection or reactivation of latent VZV. Thus, infection in adults and immunocompromised patients carries a significant risk of severe complication and higher mortality; anti-viral treatment with acyclovir should be instituted as soon as other causes are excluded.

### 2. Case Presentation

A 25-year-old woman was admitted to Khatam-Al-Anbia hospital with a history of severe abdominal pain for 2 days accompanied by nausea, and vomiting. She was well until a week before admission, when she developed a mild pharyngitis and fever. She underwent penicillin

therapy for streptococcal pharyngitis. Nevertheless, she did not respond to treatment and referred to another clinic and received cefexime. She had non-pruritic lesions as small maculopapular on her face, and trunk.

Two days later, she suddenly developed severe abdominal pain with nausea, and vomiting. On admission, (on the seventh day of illness) the patient was afebrile; the abdomen was distended and tender and bowel sounds were diminished. The liver and spleen were not palpable. Liver function tests were within normal ranges. A complete blood count revealed a white blood cell count of  $7.8 \times 10^3/\text{dL}$  (neutrophils 76% and lymphocytes 22%), hemoglobin of 10.2 g/dL, and a platelet count of  $76 \times 10^3/\text{dL}$ . Blood urea nitrogen (BUN) and creatinine level were normal. Other findings were blood glucose of 117 mg/dL, sodium of 145 mEq/L, and potassium of 3.5 mEq/L; the patient's prothrombin time (PT) was 14 s (normal 11-15 s), partial thromboplastin time (PTT) 76 s (normal 30-45 s) and INR was 1.1.

Plain abdominal X-ray showed dilated large bowel and some air-fluid levels in the small bowel, compatible with ileus. At this time, she underwent an abdominal surgery but all investigations were normal. She was un-rest and had dyspnea. She referred to ICU and treatment was started with hydrocortisone, cefazoline and ciprofloxacin.

She complained from hemorrhagic problems, including nose bleeding and vaginal hemorrhage on the second day of admission. Surgeon advised an infectious diseases consultant. The patient visited by our team, and we observed a few typical vesicular lesions on the trunk and small maculopapular on her face. Chest X-ray revealed infiltration at both lungs. Treatment with acyclovir and meropenem was started.

Blood samples for varicella, viral capsid antigen (IgM against EBV), CMV, CCHF and Dengue were sent to the laboratory. At this time, PT was 17 s; PTT, 77 s; INR, 1.7, and Hb was 8.8 g/dL. Blood culture was negative. She also received platelets and FFP because of her massive respiratory tract hemorrhage and nose bleeding. Despite these measures, the patient's clinical status worsened rapidly, and she died because of extensive hemorrhage and pulmonary failure on the three day of admission.

A few days later the results of RT-PCR and IgM-ELISA for CCHF and Dengue virus were reported negative. Only the serologic sample (IgM) was positive for varicella.

### 3. Discussion

We presented a case in which the chickenpox (VZV infection) was associated with a severe abdominal pain and unusual presentation. To our knowledge, there are a few reports of a similar unusual presentation of VZV infection preceded for several days by a clinical picture suggestive of ileus (1, 2, 7-9). All these reported patients had impaired immunity.

Ninety-five percent of cases of chickenpox occur before the age of 20, and a self-limited mucocutaneous

involvement is the most common clinical presentation. The best way to prevent chickenpox is to vaccinate children and seronegative persons (3, 4, 10) VZV infection in adults. Particularly those with impaired immunity, have the worst prognosis, mainly because of the higher incidence of visceral involvement like VZV-related pneumonia (1, 2, 7, 10).

Our patient was a healthy person with no history of important illness, who got married one month ago but was not pregnant. There was no history of vaccination or disease or exposure with confirmed chickenpox cases within two weeks earlier. Our patient had not impaired immunity, and she was a healthy woman. Adults may have more severe symptoms and may be at high risk for complications. It is important to emphasize again the possible connection between abdominal pains, pneumonia, bleeding problems, and VZV infection.

Thrombocytopenia may be caused by reduced production and survival of platelets, transient hypersplenism, or antibody-mediated destruction of platelets (6). A positive IgM-ELISA result, although suggestive of a primary infection, does not exclude re-infection or reactivation of latent VZV. A positive result from a person with a rash is usually interpreted as the laboratory confirmation of varicella. Our patient had a positive test for varicella (IgM-ELISA).

Thus, the infection in adults carries a significant risk of severe complication and higher mortality; anti-viral treatment with acyclovir should be started as soon as other causes are excluded.

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### Authors' Contributions

Study design, literature review, and manuscript preparation: Maliheh Metanat; Data collection, and literature review; Hamideh Mirshekar; Manuscript preparation, and literature review; Homa Khosravi; and Technical support, manuscript edition: Anita Alenabi.

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