

Fatal Neutropenic Enterocolitis due to *Clostridium septicum*

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ABSTRACT

We describe a case of Clostridium septicum enterocolitis in a patient with pre-B acute lymphoblastic leukaemia undergoing autologous stem cell transplant. In the setting of neutropenia, Clostridium septicum should be suspected in patients who develop signs and symptoms of acute abdomen.

Keywords: ALL, clostridium septicum, enterocolitis, neutropenia

Enterocolitis Neutropénica Fatal a Causa de *Clostridium septicum*

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RESUMEN

Se describe el caso de una enterocolitis por Clostridium septicum en un paciente con leucemia linfoblástica aguda (LLA) pre-B sometido a trasplante de células madre autológico. En el marco de una neutropenia, debe sospecharse la presencia de Clostridium septicum en pacientes que desarrollan signos y síntomas de abdomen agudo.

Palabras claves: Leucemia linfoblástica aguda, LLA, Clostridium septicum, enterocolitis, neutropenia

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CASE REPORT

A 39-year old African American man with a history of pre-B acute lymphoblastic leukaemia (ALL) was admitted for autologous stem cell transplant with BEAM (BCNU, etoposide, cytosine arabinoside and melphalan) conditioning. The patient developed fever and diffuse abdominal pain three days after transplant. Physical examination revealed a diffusely tender abdomen. A full blood count showed absolute neutrophil count of 0/microliter. After samples were sent for blood cultures, the patient was started on cefepime and gentamicin. X-ray of the abdomen was unremarkable. Five hours later, the patient fell to the floor while attempting to go to the bathroom.

The patient was hypotensive and had supraventricular tachycardia (SVT). After the initial management of SVT, he was transferred to the intensive care unit (ICU) and was started on broad spectrum antibiotics. Computed tomography (CT) scan of the abdomen showed new findings of diffuse circumferential thickening of the small and large

intestine (Fig. 1) and multiple ill-defined hypodensities in the liver, suggestive of abscesses (Fig. 2). Subsequently, the

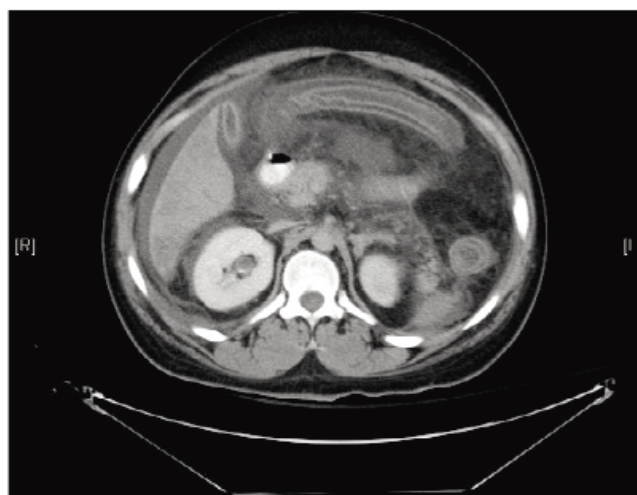


Fig.1: CT abdomen showing diffuse circumferential thickening of bowel.

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patient developed lactic acidosis and multi-organ failure and died the next day. Three days later, the blood culture results returned showing *Clostridium septicum*.

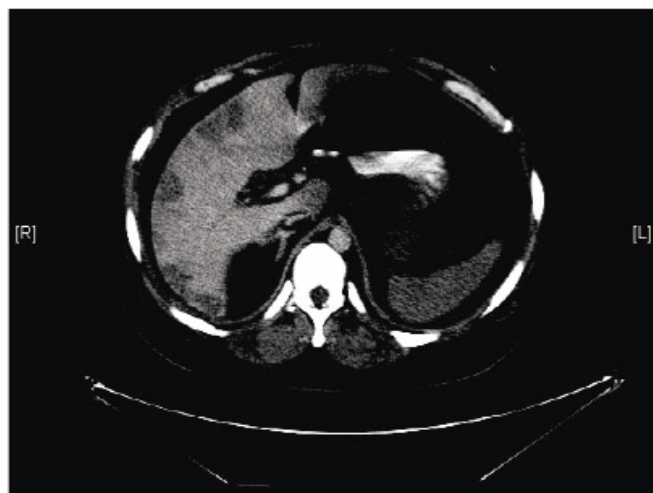


Fig. 2: CT scan showing ill-defined hypodensities in the liver suggestive of abscesses.

DISCUSSION

Clostridium septicum infection should be suspected in patients with malignancy undergoing intensive chemotherapy who develop an acute abdomen while neutropenic. It is characterized by rapid progression and has a high fatality rate.

Clostridium septicum is an anaerobic, motile, gas-forming gram positive bacillus. Infection is uncommon and makes up only 1.3% of all clostridium infections (1). The organism is aerotolerant and can establish infection in viable tissues without trauma (2). Risk factors for infections include colorectal cancer, leukaemia, lymphoma, chemotherapy, radiotherapy, neutropenia, diverticulitis, gastrointestinal surgery, diabetes mellitus and severe atherosclerosis (2, 3). Risk factors in the index patient included his primary disease of ALL, recent chemotherapy and neutropenia.

Clostridium septicum infections in adults cause myonecrosis at distant sites and extremities, enterocolitis and metastatic infections (1, 4). The presentation is non-specific

with fever, malaise and localized pain (5, 6). Fulminant enterocolitis may develop in patients with neutropenia and may present with abrupt fever, diffuse abdominal pain, vomiting and/or diarrhoea along with rapid progression to sepsis and shock (6). In *Clostridium septicum* sepsis, clinical features develop rapidly in a matter of 12–24 hours (4) with the majority of death occurring within 24 hours (7). The reported mortality rate of *Clostridium septicum* infection is 60% (3) and without treatment, the disease is almost always fatal.

Blood culture clinches the diagnosis and aids in selection of appropriate antibiotic. Plain abdominal X-ray findings are non-specific. Contrast enhanced abdominal CT is helpful in diagnosing enterocolitis and ruling out other causes of acute abdomen. In our patient, CT showed bowel wall thickening.

Medical management includes bowel rest, intravenous fluids, total parenteral nutrition, intravenous broad spectrum antibiotics and correction of neutropenia. Hence a high index of suspicion and early institution of treatment in appropriate clinical circumstances may be life saving.

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