

# Intestinal perforation complicated by necrotizing fasciitis resulting in septic shock from Clostridium Septicum treated with CytoSorb

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## Introduction

Febrile neutropenia (FN) is a potentially life-threatening complication of systemic chemotherapy. Prompt diagnosis is critical, as delays in initiating antimicrobial therapy are linked to poorer outcomes. Clostridium septicum bacteremia is a rare cause of FN, with only a few cases reported in the literature

## Methods

We report the case of a patient who presented with cecal and ascending colon perforation, associated with marked and diffuse edematous-inflammatory thickening of the bowel walls involving the cecum, ascending colon, and proximal transverse colon. Given the CT findings, recent chemotherapy administration, and laboratory evidence of severe leukopenia ( $WBC\ 1.2 \times 10^9/L$ ) with neutropenia, a diagnosis of neutropenic enterocolitis complicated by intestinal perforation was strongly suspected. The patient underwent an exploratory laparotomy with a right hemicolectomy. Postoperatively, the patient was admitted to the intensive care unit in septic shock, requiring high-dose vasopressor support. Continuous renal replacement therapy (CRRT) with continuous veno-venous hemodialysis (CVVHD) was initiated on day 2, using also CytoSorb. A total of 4 CytoSorb cartridges were used: the first two were replaced every 12 hours, and the subsequent two every 24 hours. In addition, the patient received a three-day course of IgM-enriched intravenous immunoglobulins.

As a complication of septic shock caused by Clostridium septicum, the patient developed necrotizing gluteal-lumbar fasciitis, which required multiple fasciotomies and hyperbaric oxygen therapy.

## Results

Following CRRT combined with CytoSorb, the patient's hemodynamic status showed improvement (FIG 1). Renal function gradually recovered. Over time, renal function fully normalized, and after a prolonged rehabilitation period, the patient was discharged.

## Conclusion

This case highlights the importance of early recognition and aggressive management of neutropenic enterocolitis, and Clostridium Septicum gas gangrene, a life-threatening complication in patients undergoing chemotherapy. The use of advanced therapies, including CRRT with CytoSorb and IgM-enriched immunoglobulins, may contribute to stabilization in cases of septic shock.

Figure 1: lactate, MAP and Noradrenaline levels during treatment period

