Applied Cancer Research 2006;26(3):114-115

Case Report

Investigation of Haemolytic Transfusional Reaction: a Case Report

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Key words: Clostridium perfringens. Prostate. Adenocarcinoma. Blood Transfusion.

Introduction

Haemolytic disorders are life-threatening and investigation involves immunologic mechanisms, mechanical damage of erythrocytes and red cell destruction mediated by chemicals, physical agents or micro-organisms. The spore-forming bacterium *Clostridium perfringens* is a Gram-positive anaerobic pathogen (Figure 1), largely distributed in nature, causing enteric disease and producing at least 15 different toxins [1]. Severe, often fatal hemolysis can occur in patients with *Clostridium perfringens* septicaemia, secondary to a α-toxin release. This diagnosis may be considered in an investigation of a Coombs negative haemolytic anemia [2]. Although not very well understood, exotoxins appear to be tissue-destructive soluble antigens produced by clostridia. They include lecithinase, collagenase, hyaluronidase, fibrinolysin, hemagglutinin, and hemolysin toxins. Alpha toxin is produced by most clostridia and has phospholipase C activity. This potent lecithinase causes lysis of red blood cells, myocytes, fibroblasts, platelets, and leukocytes. It also may decrease cardiac inotropy and trigger histamine release, platelet aggregation, and thrombus formation [3].

Case Report

A 72-year-old man, diagnosis of prostate adenocarcinoma with lung metastasis, in medical care since 1999. On January 2004 he developed a new tumour from rectum with liver metastasis and initiated a chemotherapy schedule, with last infusion on November 2004. Two months later the patient was admitted at our hospital with complaints of abdominal distension and urinary retention, being removed to intensive care unit with acute renal failure and intestinal occlusion. Submitted to an exploratory laparotomy and colostomy, the patient was transfused during surgery. Follow up showed a general deterioration four hours after the procedure, with hypotension, decreased haemoglobin level, haematuria and acute respiratory failure, requiring mechanical ventilatory support. Although the patient had no fever or any identified infection agent, antibiotic therapy was initiated with Ceftriaxone and Metronidazole. The blood bank was contacted to investigate haemolytic transfusional reaction. Patient, transfused blood typing and antibody screening were confirmed. Post transfusion direct antiglobulin test and antibody screening did not evidence any reaction. Clinical laboratory informed that the patient serum had hemolysis (Figure 2). Then, Penicillin therapy was introduced due to suspicions of *Clostridium perfringens.* Although disseminated intravascular

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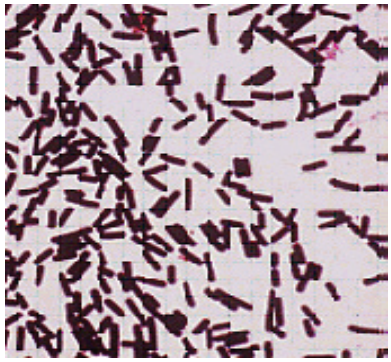

Figure 1 - Gram stain

Figure 2 - Blood culture reveal hemolysis on plate

coagulation was present, the patient was submitted to another surgical intervention: a cistostomy. The surgical finding was rectum necrosis and intensive bladder bleeding. Despite intensive care and massive transfusion involving 25 components he died 72 hours after the first surgery. The infectious agent was confirmed after his death.

References

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