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Anaphylatic Shock during Surgery for Hydatid Cyst of the Liver

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Abstract **Case Report**

Hydatidosis is a common pathology in the Maghreb countries and which still remains endemic in Morocco. It is more common in young adults with a female predominance. Hydatid cyst is a serious complication, requiring rapid diagnosis and appropriate therapeutic response. We report a case of intraoperative anaphylactic shock in a patient operated on for a hepatic and peritoneal hydatid cyst aged 31 years, without any pathological history, the clinic was mainly marked by abdominal pain and a feeling of heaviness evolving for 3 weeks. The blood count, blood ionogram, hemostasis and renal assessment are normal and the liver assessment noted the presence of hepatic cytolysis (AST: 496 IU/L and ALT: 378 IU/L) as well as a Positive hydatid serology. The intraoperative period is marked by the appearance of vascular collapse with arterial hypotension 59/34 and a mean arterial pressure of 35 mmHg followed by a desaturation of 62% and without associated skin signs.

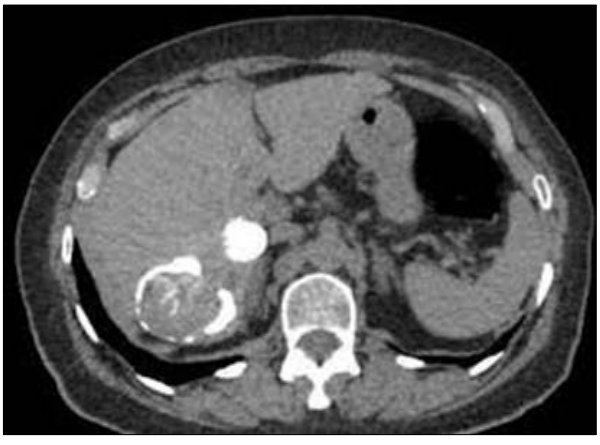
Keywords: Hydatidosis, Echinococcosis, Hydatid cyst, Morocco, Endemic disease, Parasitic infection.

INTRODUCTION

Intraoperative anaphylactic shock during surgery for hydatid cyst is a serious complication, requiring rapid diagnosis and an appropriate therapeutic response. It has the particularity of being serious, of sudden onset and difficult to diagnose regarding the etiology of the vascular collapse, which can be of anaphylactic, hemorrhagic or toxic origin [1]. Hydatidosis is a common pathology in the Maghreb countries and which still remains endemic in Morocco. It is more common in young adults with a predominance of females. It is due to the development in the body of a flatworm of the genus echinococcocus, echinococcus granulosus. Its treatment is mainly based on surgery. Complications are rare, but serious, life-threatening [2].

PATIENT AND OBSERVATION

We report a case of anaphylactic shock intraoperatively in a patient operated on for liver and peritoneal hydatid cyst. This is a 31-year-old patient, without any pathological history or notion of allergy, scheduled for surgical treatment of hepatic hydatidosis. The clinic was mainly marked by abdominal pain and a feeling of heaviness that had been evolving for 3 weeks. Paraclinical examinations such as blood count, blood ionogram, hemostasis and renal assessment are normal and liver assessment noted the presence of hepatic cytolysis (AST: 496 IU/L and ALT: 378 IU/L) as well as hydatid serology positive. An abdominal CT scan confirmed the diagnosis by visualizing hepatic and peritoneal cystic formations.



The procedure is performed under general anesthesia with fentanyl (3µg/kg), propofol (2.5mg/kg) and rocuronium (0.6mg/kg). Anesthetic maintenance is done with sevoflurane Mac 2.5. The intraoperative period is marked by the appearance of vascular collapse with arterial hypotension 59/34 and a mean arterial

pressure of 35mmHg followed by desaturation of 62% and without associated skin signs.

Treatment began early with vascular filling with isotonic saline 0.9% (30ml/kg), on two occasions and without improvement in the hemodynamic state suggesting anaphylactic shock, the use of intravenous administration a bolus of adrenaline of 100ug three times, and corticosteroid therapy based on hydrocortisone hemisuccinate 100 mg IVD, followed by a continuous infusion of adrenaline at a rate of 0.5µg/kg/min through a central venous line. Adrenaline withdrawal was done gradually after 24 hours of monitoring in the intensive care unit.

DISCUSSION

Hydatid cyst of the liver is a parasitic condition caused by the intrahepatic development of the larva of the taenia Echinococcus granulosus. The contents of this cyst are rich in antigens whose passage into the blood circulation or into the peritoneal cavity following rupture of the cyst, can be the cause of severe anaphylactic shock putting the patient's vital prognosis at risk [4]. The contents of the cyst, proteins and polysaccharide, is responsible for a host-parasite humoral conflict by activation of tissue mast cells and blood basophils sensitized by a previous antigenic contact [5]. These cells carry, on the surface, specific IgE linked to membrane receptors. The reintroduction of the antigen leads to the formation of bridges between the receptors which results in a cascade of reactions and the massive release of biochemical mediators, histamines in particular [6, 7]. The ubiquitous nature of activated cells accounts for the polymorphism of the clinical manifestations observed, although the main character is linked to cardiovascular manifestations [8]. Anaphylactic manifestations can take on very different aspects than bronchospasm [9]. In our case, the anaphylactic reaction was immediately massive with cardiovascular syndrome in the foreground not associated with hemorrhagic shock and without cutaneous-mucosal signs, associated with respiratory manifestations it is therefore a true anaphylactic reaction. Anaphylactic shock occurring intraoperatively is much less described. The observations of JAKUBOZSKI *et al*., TERPSTRA *et al*., and BOUCHEREZ *et al*., emphasize the rarity of the cases described, the absence of premonitory signs, and the difficulty of diagnosis given the occurrence of sudden collapse after sterilization and evacuation of the cyst.

CONCLUSION

The occurrence of intraoperative anaphylatic shock during hepatic hydatidosis is a very rare event, but serious due to its rapid onset, its diagnostic difficulty and its high mortality. The effectiveness of the treatment results from the rapid diagnosis and treatment of which adrenaline is the reference product in this situation.

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