

PO 32 - BONE CEMENT IMPLANTATION SYNDROME: A CASE REPORT

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Introduction: Bone cement implantation syndrome (BCIS) is defined as hypoxia, hypotension and/or unexpected loss of consciousness occurring during cementation, in a patient undergoing cemented bone surgery.¹ The etiology and pathophysiology are not fully established being right ventricular failure secondary to increased pulmonary artery pressure one possible cause with recent evidence proposing an embolus-mediated model.¹

Case report: Male, 34-years-old, ASA II, diagnosed with epilepsy, submitted to percutaneous vertebroplasty of T12-L3 due to traumatic vertebral fracture secondary to a car accident. The surgical procedure was performed under general anesthesia. After cement implantation with high pressure, there was transient desaturation with peripheral saturation of 93% and a drop in systolic blood pressure from 125mmHg to 98mmHg with no other complications to report. On the third postoperative day, the patient developed an acute right pleuritic chest pain that worsened with deep inspiration associated with peripheral saturation of 97%. At observation, the patient was eupneic at rest without oxygen support with crackles in the right lung base at pulmonary auscultation and no changes in blood gas analysis. Lower limbs were without edema or signs of thromboembolism. Analyzes were collected, highlighting a rise in d-dimers value. From the imaging exams performed, the chest X-ray showed wedge opacity in the right lower lobe (Hampton hump sign) and bilateral linear opacities more evident on the right lobe. Chest CT scan showed an embolus in the right lower lobe, causing peripheral ischemia confirmed by CT angiography. Non-thrombotic pulmonary embolism due to cement was assumed. Considering the clinical stability, the patient was discharged from the service treated with subcutaneous enoxaparin with improvement in the clinical scenario.

Discussion: BCIS is a potentially fatal perioperative complication ranging from transient desaturation or mild hypotension to cardiac dysrhythmias and death.^{2,3} Patients at high risk for severe BCIS should be identified and preventive measures such as avoidance of excessive pressurization of implants should be taken to reduce it's consequences. It's management depends not only on a meticulous anesthetic plan but also on the surgeon's role in reducing it's risk and being crucial for an uneventful procedure.

References: 1. Hines, C. B. (2018). Understanding Bone Cement Implantation Syndrome. *AANA journal*, 86(6); 2. British journal of anaesthesia, 2009, 102(1), 12-22; 3. Clinical Cases in Mineral and Bone Metabolism, 2009, 6(2), 125-30.





