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A Rare Presentation of Pulmonary Embolism: Cement Embolism after Vertebroplasty

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Introduction: Vertebroplasty is a minimally invasive method for the treatment of painful vertebrae fractures. Sementembolism, a rare complication of this method, is usually asymptomatic and does not require treatment. Anticoagulant therapy or surgical embolectomy is recommended when symptomatic.

Case Presentation: A 41-year-old man applied to our clinic with chest pain and shortness of breath 3 days after percutaneous vertebroplasty that was performed for the fracture of thoracic 12 (Th12) vertebra due to a traffic accident. There were no pathological findings in his physical examination. He was normotensive, and room air oxygen saturation (SaO2) was 98%. A left lung lower zone branching radio-opacity was detected in postero anterior (PA) chest radiography. His hematological, biochemical and cardiac laboratory parameters were in normal values. There was no electrocardiographic abnormality. With suspicion of cement embolism, thorax CT-angiography was performed. The Th12 vertebrae had a compression fracture in the corpus and a hyperdense view of cement approximately 2.2 cm in diameter. In the right paravertebral space, the linear hyperdense line in the hemiazigos vein was noteworthy at the distance between Th 11, Th 12 and L1 vertebrae corpus (compatible with cement embolism). In addition, high density areas were observed in both lung parenchyma in right middle lobe, upper lobe in left lung and subsegmental branches in lower lobe medial area (cement embolism). There were no pathological findings or pleural effusion in the lung parenchyma. The patient was symptomatic for pulmonary embolism but he was hemodynamically stable. Echocardiography (Echo) revealed an ejection fraction of 60% and a mean pulmonary arterial pressure of 25mmHg. The removal of cement embolus was not considerated since the patient was hemodynamically stable, Echo was normal and there was not any sign of cement in the main pulmonary arteries. He started to the treatment with subcutaneus anticoagulant therapy and his respiratory symptoms were recovered quickly. After treatment during 3 months, we ended the anticoagulant therapy. Since then, the patient has been under control and has no complaints.

Conclusion: Cement embolism may not be a mortal clinical situation if it is diagnosed early and treated appropriately to the location of mechanical occlusion in the pulmonary arteries. Another important point is that all patients should be controlled with routine chest X-ray after vertebroplasty, before discharging from hospital. There is not any consensus algorithm about the treatment of pulmonary cement embolism, but case reports and case series show some outcomes.

Keywords: Vertebroplasty, complication, cement leakage, cement embolism, pulmonary embolism