

中文題目：骨水泥引致的肺栓塞影像報告

英文題目：An Intracardiac Bone Cement Pulmonary Embolism after Vertebroplasty

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Introduction: Bone cement pulmonary embolism is a rare complication after receiving vertebroplasty. This time, we present a case whose bone cement lies in his right heart system and was first mistaken as wires after thoracic surgery.

Case Presentation: A 90-year-old man visited our hospital due to back pain for about one week. His pain worsened while sitting and relieved when lying down. He denied recent trauma event. He had histories of long-term steroid usage for back pain and advanced chronic kidney disease. Serial image studies(X ray and computed tomography) showed compression bone fracture involving 4th and 6th thoracic spine. Thus he received vertebroplasty with bone cement injection approximately 2 months ago (Fig A). During regular outpatient department follow-up, he had no shortness of breath and his back pain had relieved. However, his chest radiograph showed a newly developed linear pattern lesion which was caused by the bone cement and surrounded the heart (Fig B & C). The computed tomography showed ribbon-like radio-opaque density arising from the 6th thoracic spine to azygos vein and superior vena cava, progressing through the right heart system till the pulmonary artery (Fig D & E). Based on these findings, bone cement pulmonary embolism (CPM) was finally diagnosed. In addition, transthoracic echocardiography parasternal short axis view revealed high echogenicity foreign body in his right ventricle. Being asymptomatic, the patient was kept under observation. Surgical embolectomy was not preferred. Unfortunately, he died of COVID-19 infection pneumonia approximately one month after the admission.

Discussion: There are merely only 84 case reports of CPM till date. Most CPM cases were asymptomatic; only 1% had symptoms like dyspnea and sudden death. CPM can occur after vertebroplasty or kyphoplasty and is incidentally diagnosed when multiple cement emboli are detected on subsequent imaging. Because bone cement has high radiodensity, on plain film, it scatters variously through related blood vessel. Many cases occurred after polymethylmethacrylate injection due to excess liquid or injection with too much pressure. Needle misposition near the basivertebral vein and too much injected material in the vertebral body are also predisposing factors.

Conclusion: Currently, there is no convincing evidence for the treatment of CPM. However, regular follow-up is recommended for patients with asymptomatic peripheral embolism. For patients with symptomatic peripheral or asymptomatic central embolisms, conservative treatment including heparinization, followed by warfarin therapy may be considered. Surgical intervention is indicated when symptomatic central embolisms are detected.

Figure A



Figure B



Figure C



Figure D

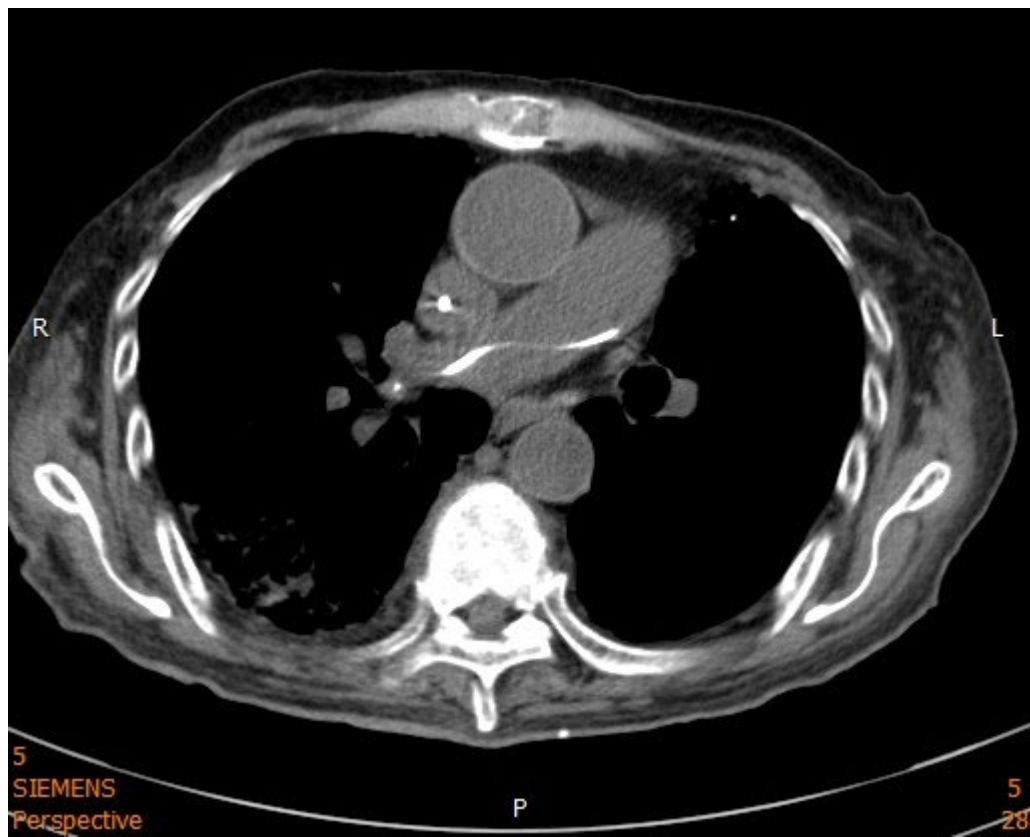


Figure E

