THE ANATOLIAN JOURNAL OF CARDIOLOGY

Official journal of the TURKISH SOCIETY OF CARDIOLOGY

A Fishbone-Like Bone Cement Fragment Crossing the Tricuspid Valve and Penetrating the Septum: Rare Sequela of Percutaneous Vertebroplasty

E-PAGE ORIGINAL IMAGE

Percutaneous vertebroplasty is a commonly used minimally invasive procedure for osteoporotic or metastatic vertebral compression fractures, but cement leakage is frequent and, in rare cases, may enter the paravertebral venous system, migrate to the azygos vein and inferior vena cava, and finally reach the right atrium or ventricle, leading to severe complications such as arrhythmia, cardiac perforation, or pulmonary embolism. We report a case of delayed intracardiac cement embolism occurring 1 year after vertebroplasty. A 77-year-old woman presented with recurrent dizziness, palpitations, and precordial stabbing pain. Echocardiography and computed tomography revealed a linear high-density fragment extending across the tricuspid valve into the right heart chambers (Figure 1). Open-heart surgery under cardiopulmonary bypass removed a 7-cm fishbone-shaped cement

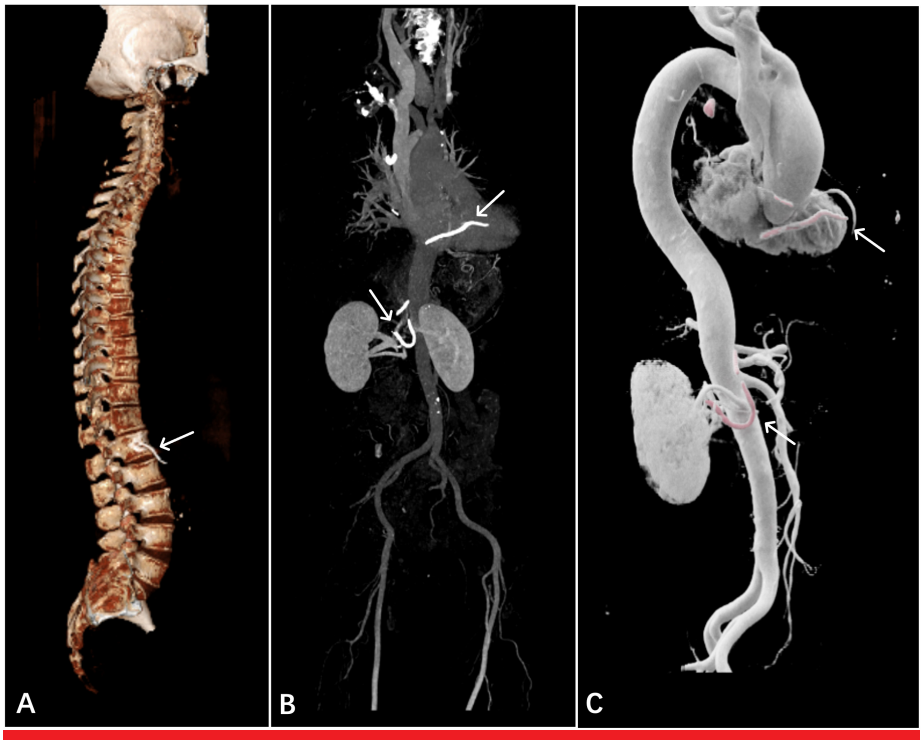

Figure 1. Contrast-enhanced CT with 3D reconstruction. Figure A shows a strip-like, fishbone-shaped bone cement fragment originating from the right anterolateral aspect of the T12 vertebral body. Figure B demonstrates the presence of bone cement adjacent to the T12 vertebra and within the heart. Figure C presents a 3D reconstruction of the fishbone-shaped bone cement fragment and its anatomical relationship to surrounding structures; the pink strip in the image represents the bone cement.

Xin Xie

Yibing Fang

Department of Cardiac Surgery, First Affiliated Hospital, Army Medical University (Third Military Medical University), Chongqing, China

Corresponding author:
Yibing Fang
✉ fybohyes@163.com

Cite this article as: Xie X, Fang Y. A fishbone-like bone cement fragment crossing the tricuspid valve and penetrating the septum: rare sequela of percutaneous vertebroplasty. *Anatol J Cardiol.* 2026;XX(X):1-2.

DOI:10.14744/AnatolJCardiol.2025.6015

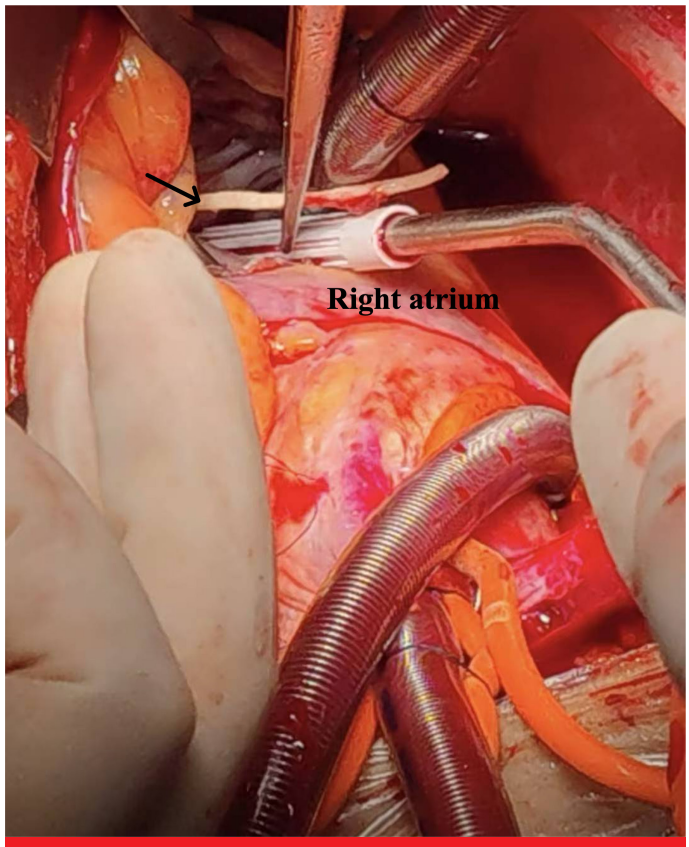

Figure 2. Intraoperative view of the intracardiac bone cement fragment. The surgical plan involved cardiopulmonary bypass with a beating heart. The right atrium was incised to expose the bone cement fragment, which was then completely removed.

fragment (Figure 2), and no major myocardial injury was observed. The patient recovered uneventfully.

Cement leakage is related to osteoporosis severity, vertebral integrity, injection pressure, and cement viscosity; venous leakage is most likely to cause distant embolization. Intracardiac cement fragments may induce serious cardiovascular events, and asymptomatic cases can delay diagnosis. Management should be individualized according to symptoms, fragment location, and mobility; surgery is recommended when there is cardiac involvement or high risk of complications. Prevention relies on thorough preoperative assessment, meticulous injection technique, and vigilant postoperative monitoring. Nonspecific symptoms such as palpitations, chest pain, or dyspnea after vertebroplasty warrant timely imaging to detect potential embolism and reduce adverse outcomes.

Informed Consent: Written informed consent was obtained from the patient for participation in the study.

Declaration of Interests: The authors have no conflicts of interest to declare.

Funding: The authors declare that this study received no financial support.