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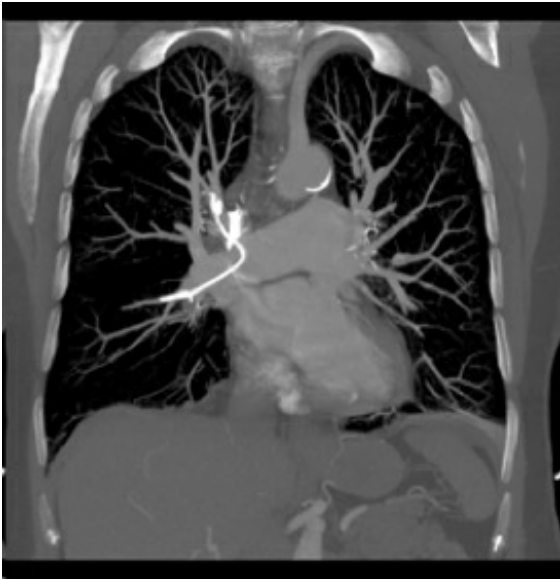


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Pulmonary Cement Emboli: An Underreported Phenomenon or Rare Kyphoplasty Complication

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Kyphoplasty is an intervention to treat and stabilize painful vertebral compression fractures by injecting Polymethylmethacrylate (PMMA) cement in the vertebral cavity. It has become increasingly important procedure in pathologic compression fracture treatment. Pulmonary cement embolism (PCE) happens by leakage of cement through the venous plexus or retrograde migration in the arterial vessels to aorta. It was reported as a rare complication of this procedure (3.5%) but others have suggested that because of paucity in symptoms, PCE is often overlooked and can happen in up to 28.6% of kyphoplasty patients. PCE cause a wide spectrum of symptoms ranging from asymptomatic to mild non-specific subacute symptoms, and rarely, observed to cause morbid events like cardiac tamponade, perforation, or obstructive shock from large size embolism. There are no standard diagnosis modality or treatment modalities universally agreed on currently. Diagnosis is established with clinical history and characteristic radiographic findings. Chest x-ray shows PCE as radio-opaque line in the distribution of the pulmonary arteries. Non-contrasted chest CT they are recognized as a hyperdense deposit. Adding contrast CT can detect superimposed endovascular thrombi triggered by the cement and the turbulent flow. The limited number of published reports related to PCE, and lack of satisfactory analyzed data, lead to lack of robust recommendations for PCE treatment. Many reports and systematic review consider a strategy that counts on symptoms, size and location of the emboli for treatment. We present a 67-year-old woman presented with sudden onset chest pain and shortness of breath after kyphoplasty few days prior. EKG showed ST elevation myocardial infarction and left cardiac catheterization revealed no obstructive disease. Chest CT pulmonary embolism study showed foreign body and pulmonary angiogram was done for retrieval and identified MMA cement in the pulmonary artery. Procedure was complicated by obstructive shock and cardiac tamponade resulting in pericardiocentesis and pericardial window. Patient was anticoagulated and discharged in stable condition. PCE can be mistaken for STEMI, thrombotic emboli, COPD exacerbation and there is a need for a higher index of suspicion for PCE where there is a history of kyphoplasty or evidence of kyphoplasty on imaging so appropriate diagnostic imaging can be obtained. Timely treatment can be initiated according to the current recommendations despite the lack of robust studies. In addition there needs to be awareness that kyphoplasty related complications exist and risks of procedure are appropriately disclosed.



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