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IMAGING VIGNETTE

INTERMEDIATE

CLINICAL VIGNETTE

A Rare Cause of Chest Pain

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ABSTRACT

A patient presenting with typical chest pain with a background of ischemic heart disease often alarms one of an acute coronary syndrome but differentials should always be ruled out. We report a case of typical chest pain which was referred from a district general hospital as an acute coronary syndrome but turned out to be a pulmonary artery sarcoma. (**Level of Difficulty: Intermediate.**) (J Am Coll Cardiol Case Rep 2020;2:314–5) © 2020 The Authors. Published by Elsevier on behalf of the American College of Cardiology Foundation. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

This report describes a 66-year-old male patient who presented with chest pain and was found to have pulmonary artery (PA) sarcoma. He presented to a district general hospital with a 1-week history of shortness of breath on exertion and a 1-day history of crushing chest tightness after climbing stairs. The central chest pain was acute in onset, radiated to his neck, and lasted for more than 1 h with worsening on exertion. He also reported 2 episodes of pre-syncope and excessive perspiration. His past medical history was significant for a myocardial infarction 20 years earlier (angina free), hypertension, hypercholesterolemia, and inflammatory bowel disease. Regular medications included the following: atenolol, 100 mg once daily; atorvastatin, 20 mg at bedtime; bendroflumethiazide, 2.5 mg once daily; and esomeprazole, 40 mg once daily.

On examination, the patient was flushed and afebrile; his pulse was 76/min and regular; his blood pressure was 160/82 mm Hg; and his oxygen saturation was 93% on room air. An electrocardiogram revealed T-wave inversions in leads III, aVF, and V_1 to V_6. Initial laboratory tests revealed rising troponin (TnT) levels (1: TnT, 10.05 μg/l; 2: TnT, 20.04 μg/l).

Acute coronary syndrome was the first differential diagnosis, so the patient was shifted to our tertiary care cardiac center, with a plan to obtain a coronary angiogram. Bedside echocardiography showed a suspected thrombus in the PA. The maximum gradient across the defect in the PA was 66 mm Hg; mean PA pressure was 35 mm Hg; left ventricular function was normal; and the right ventricle was dilated but function was normal, with right ventricular systolic pressure of 74 mm Hg and right atrial pressure of 15 mm Hg.

The initial impression was that of a massive pulmonary embolism. Low-molecular-weight heparin was administered. The plan changed to urgent computed tomography (CT) of the PA, with delay of the invasive coronary angiogram. CT of the PA (**Figure 1A**) showed a large filling defect in the main PA extending to the left PA into the lobar branches; the defect appeared to be adherent to the left PA wall.

Urgent embolectomy was planned (the 3-dimensional CT scan shown in **Figure 1B** was not yet available). Surgery was performed the same evening. Intraoperative transesophageal echocardiography confirmed the transthoracic echocardiographic findings: there was a mass in the main PA, but with associated right ventricular hypertrophy. Embolectomy was performed and showed a mass adherent to the intima of the main PA. The mass was described as grayish, extremely firm, and fleshy, extending down to the pulmonary valve and

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Informed consent was obtained for this case.

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distally to the left PA. The plane between the mass and the intima of the PA was ill-defined, and it was densely adherent. At this point, the differential diagnoses were: 1) organized thrombus; and 2) tumor.

Repair was performed using a resected bovine pericardial patch. The patient had an uneventful recovery. Histological examination (Figures 1C to 1E) confirmed the diagnosis of PA sarcoma.

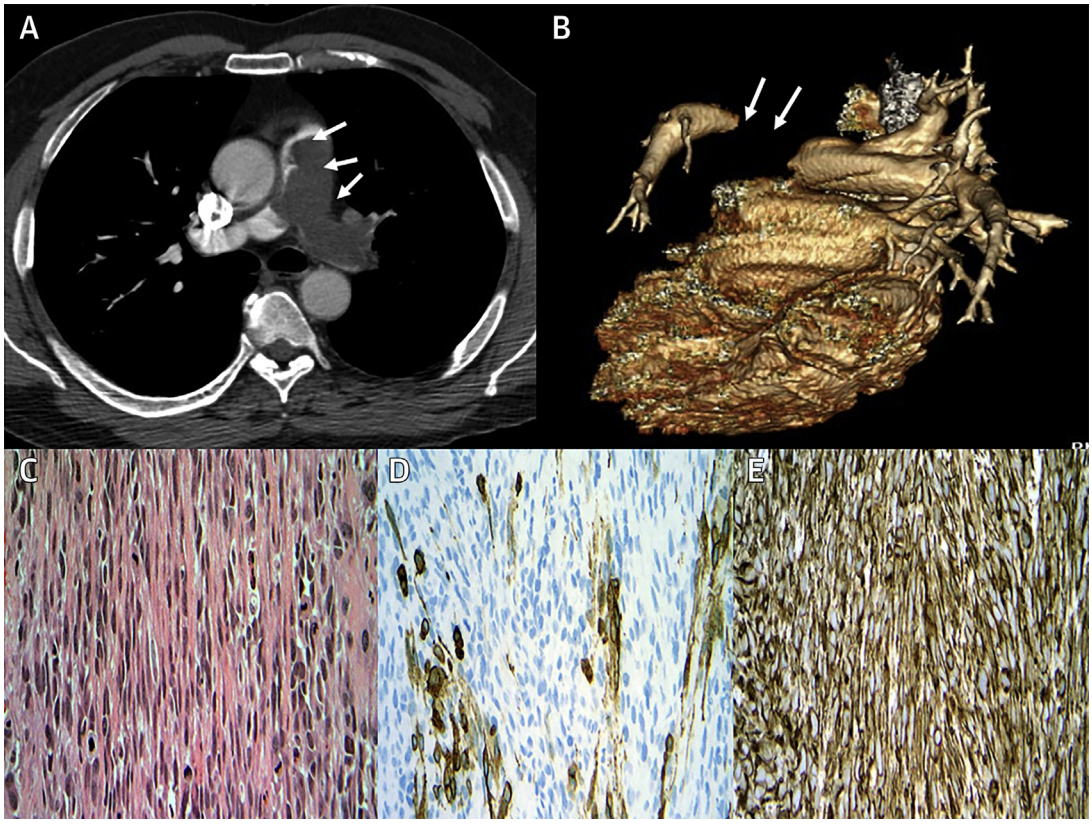
ABBREVIATIONS AND ACRONYMS

CT = computed tomography

PA = pulmonary artery

TnT = troponin

FIGURE 1 Pulmonary Artery Sarcoma



(A) Axial image from a computed tomography pulmonary angiogram showing a large filling defect **(arrows)** in the pulmonary trunk and left main pulmonary artery. **(B)** A 3-dimensional volume-rendered image from a posterior viewpoint showing a void where the pulmonary trunk and left main pulmonary artery should be **(arrows). (C)** Microscopy. **(D)** Immunolabeling with actin. **(E)** Image shows that vimentin immunolabeling results were positive.

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