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Aberrant Right Subclavian Artery Hematoma Following Radial Catheterization

George Kassimis, MD, MSc, Nikant Sabharwal, BMBCh, BSc, Niket Patel, MBBS, BSc, Adrian Banning, MBBS, MD

Oxford, United Kingdom

A 66-year-old man with previous stenting to the left anterior descending coronary artery and the right coronary artery performed from the femoral approach presented with chest pain. Elective coronary angiography was performed from the right radial artery. Accessing the ascending aorta required extensive manipulation, but both right and left coronaries were visualized using Judkins diagnostic catheters and were shown to have no evidence of obstruction. Four hours later, the patient experienced

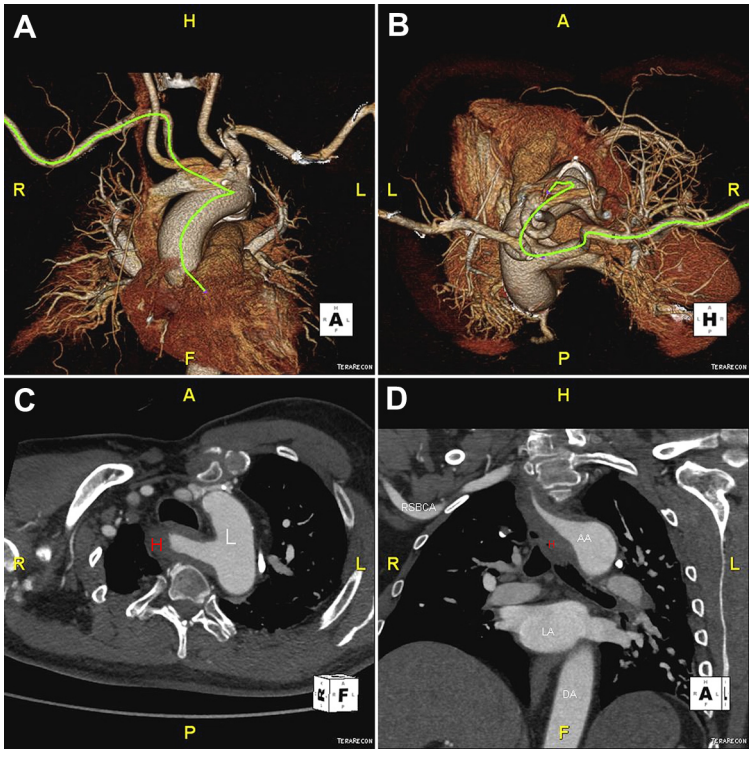

Figure 1. Aberrant Right Subclavian Artery Hematoma Following Radial Catheterization

Multidetector computed tomography 3-dimensional volume-rendered reconstruction of the great vessels. The course of the catheter from the right subclavian artery to the aortic root is highlighted in **green** in the anteroposterior projection **(A)** and the inferior view from the head **(B)**. **(C)** Oblique projection in the axis of the insertion of the right subclavian artery to the aortic arch. The hematoma (H in **red**) and lumen (L in **white**) are marked accordingly. **(D)** Rotated coronal projection of the right subclavian artery and its insertion to the aortic arch. AA = aortic arch; DA = descending aorta; H = hematoma of the right subclavian artery; LA = left atrium; RSBCA = right subclavian artery.

From the Oxford Heart Centre, John Radcliffe Hospital, Oxford, United Kingdom. The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

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severe chest pain without ischemic electrocardiographic changes. Examination revealed a difference in blood pressure between the right (80/50 mm Hg) and left (140/95 mm Hg) arms. Multidetector computed tomography (MDCT) was performed to exclude aortic dissection, and an iatrogenic intramural hematoma of aberrant right subclavian artery (ARSA) was diagnosed. Pain relief was administered, and the pain settled with medical therapy, allowing discharge within 72 h. He was asymptomatic at clinical follow-up.

ARSA arising from the descending thoracic aorta is an uncommon congenital variant that occurs in about 0.2% to 1.7% of the population (1). In such cases, the tortuous course of the ARSA imposes difficulty in passing a guidewire to the ascending aorta during right transradial catheterization. The catheter has to take a zigzag course through the RSA to the descending aorta, and then to the ascending aorta (Figs. 1A and 1B) (2). In this case, catheter manipulation caused an intramural hematoma (Figs. 1C and 1D), diagnosed by MDCT. Management of this condition is conservative, with pain relief and blood pressure control. It can be suspected by angiographic visualization, in the anteroposterior view, of the angle of the catheter when it engages the ascending aorta, or by manual angiography at the ostium of the RSA (2). During right transradial coronary angiography, clinicians should be vigilant for this anatomic anomaly, and although technically difficult, it is feasible to continue the procedure without switching to the femoral artery approach (3).

Reprint requests and correspondence: Dr. George Kassimis, Oxford Heart Centre, John Radcliffe Hospital, Headley Way, Oxford OX3 9DU, United Kingdom. E-mail: gksup@yahoo.gr.

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