Penetrating Atherosclerotic Ulcer of the Aortic Arch

Christian Firschke, MD; Marek Orban, MD; Peter Andrássy, MD; Rüdiger Lange, MD; Albert Schömig, MD

A 62-year-old man was referred to our hospital with a 2-day history of moderate continuous interscapular pain. The patient had a history of arterial hypertension and coronary artery disease treated with bypass surgery in 1990. His medication consisted of aspirin, a β-blocker, and an ACE inhibitor. His physical examination was unremarkable except for a blood pressure of 150/95 mm Hg. Acute coronary syndrome was ruled out. A contrast-enhanced CT scan showed a narrow-necked, contrast-filled outpouching of the aortic arch (Figure 1, *) embedded in a mass of lower contrast uptake (Figure 1, arrows). The dimensions of the ascending and descending aorta were normal. On transesophageal echocardiography, marked atherosclerosis of the descending aorta was seen. The anterior wall of the aortic arch could not be delineated unequivocally. An ulcerlike crater (Figure 2, *) with a diameter of ∼2 × 2.5 cm was part of the anterior margin of the aortic arch (Movie I) and was surrounded by material of varying echolucence with color Doppler signals outside the lumen of the aorta (Figure 3, arrows; Movie II). On the basis of these findings, perforation of the aortic arch with periaortic hematoma was assumed and was suspected to have been caused by atherosclerotic degeneration of the aortic wall. Urgent surgery was performed, and intraoperatively, extensive atherosclerotic ulceration was found in the aortic arch. The anterior part of the aortic wall in that region was virtually nonexistent, and a functional lumen had been fashioned by semiliquid thrombotic material surrounding the aorta, held together by numerous adhesions. The aortic arch was replaced with a 30-mm Hemashield prosthesis, and the supra-aortic vessels were reimplanted. The patient’s postoperative course was uneventful, and he was discharged after 10 days.

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Figure 1. Contrast-enhanced CT scan of the aortic arch.

Figure 2. Transesophageal echocardiogram of the aortic arch.
Figure 3. Color Doppler on transesophageal echocardiography (same image plane as in Figure 2).
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