Severe atherosclerosis in the internal mammary artery after aortic coarctation

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A 79-year-old man was scheduled for cardiac bypass surgery and had undergone aortic coarctation repair 41 years ago. Intraoperatively, the left internal mammary artery (IMA) revealed to be tortuous with absent palpable pulses (Fig. 1a and b). We performed a triple coronary artery bypass grafting with three saphenous vein grafts. Histological evaluation of the resected artery showed extensive stenosing atherosclerosis with prominent intimal fibrosis and even calcification (Fig. 2). This case showed that the late repair of aortic coarctation at the age of 39 led to massive atherosclerotic damage to the IMA due to long-term hypertension in the pre-stenotic circulation.

Fig. 1. (a) Resected left internal mammary artery with tortuous appearance and marked bulging due to underlying extensive calcified plaques (arrows). (b) Longitudinal opening of the vessel revealed an advanced atherosclerotic process of its wall.
Fig. 2. Histological image of the excised internal mammary artery (H&E staining; ×5). The membranous elastica interna layer is indicated by arrows.