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LETTER TO THE EDITORS

Atypical angina pectoris: the compressed graft

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Sirs:

In 2018, an 89-year-old, frail man presented to our clinic with unstable angina, dyspnea, and NYHA III, that had occurred over the last 3 weeks. A history of ischemic cardiomyopathy with global myocardial hypokinesia and a severely reduced ejection fraction is known. Further comorbidities included a moderately reduced kidney function and impaired glucose tolerance. In 1995, the patient had undergone aortocoronary bypass surgery with venous grafts on the marginal branch of RCX and RCA as well as a LIMA graft on the LAD. Due to sinoatrial block, the patient is pacemaker dependent since 1998. Over time, the venous bypass on the marginal branch of RCX gradually occluded. In 2015, he suffered from an NSTEMI. At that time coronary angiography revealed an occlusion of proximal LAD, RCA and subtotal lesion of the RCX. The bypass grafts on the LAD and RCA showed no signs of relevant stenosis. A PTCA followed by implantation of a drug-eluting stent in the RCX was successfully undertaken.

At time of current admission in 2018, he presented with signs of cardiac decompensation and a highly increased NT-proBNP. A regular pacemaker ECG was documented with no signs of ST-segment elevations. Due to the presence of unstable angina in a high-risk setting, we proceeded directly with coronary angiography. Surprisingly, contrast flow of the venous graft on the RCA was clearly compromised by an intact sternal cerclage [electronic supplementary material (Movie)], whereas the other vessels (RCX and LIMA graft) did not show signs of any relevant de novo stenosis.

We proceeded with coronary computed tomography angiography (Fig. 1). A retrosternal compression of the venous graft by the retrosternal cerclage could be confirmed (Fig. 1). Perfusion stress-imaging via MRI could unfortunately not be undertaken due to a non-compatible pacemaker. Transthoracic echocardiography revealed global myocardial hypokinesia.

We discussed the findings with the patient. The patient who was already fragile and more than 89 years old, unfortunately concurrently suffered from occult GI bleeding and chronic anemia. Given his multimorbid condition we refrained from further interventional treatment and instead optimized his medical treatment.

Sternal wire abnormalities, most notably displacement, can be seen in patients with sternal dehiscence, which occurs in ≈ 1–3% of patients after open-chest cardiac surgery with complete median sternotomy [1, 2]. Most of these complications occur in the first few weeks after sternotomy and computed tomography is the diagnostic modality of choice to allow precise wire localization [3]. Serious to fatal complications including pericardial and mediastinal hemorrhages caused by sternal wire migrations or erosions have been described [2, 4–6]. Our patient, however, had bypass surgery more than 20 years prior to hospital admission with no signs of prior graft compression in angiography. It is a rare case of atypical chest pain due to external bypass graft compression by an intact sternal cerclage [2, 5]. The most plausible explanation was increasing frailty due to loss in lean and muscle body mass. Our unusual case demonstrates that external compression of a venous graft can happen even long after surgery and should be considered as a rare differential diagnosis for atypical chest in frail persons.

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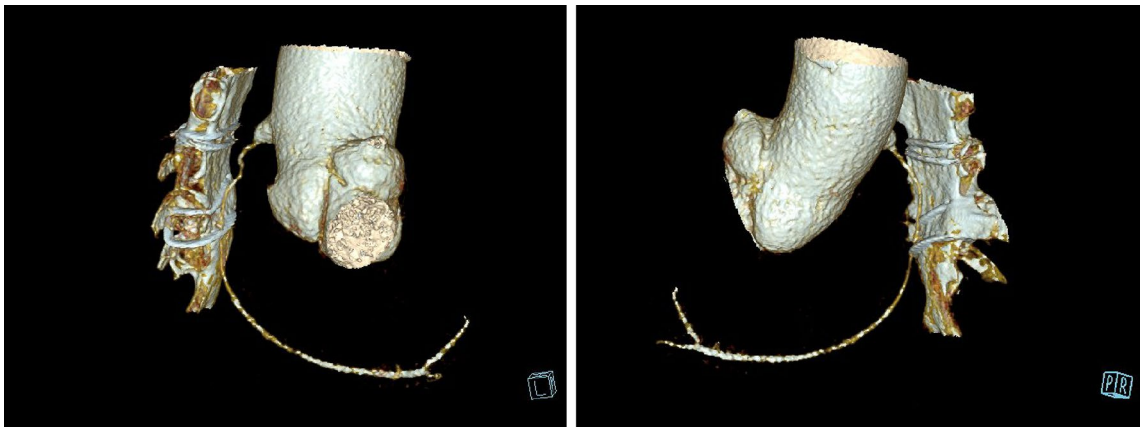

Fig. 1 Coronary computed tomography angiography of venous bypass graft on RCA

Compliance with ethical standards

Conflict of interest All authors declare that they have no conflict of interest.

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