

Small popliteal aneurysm thrombosis after SARS-CoV-2 vaccination

The impact of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic cannot be overstated. So far, more than 5 million people have succumbed. The virus essentially held the world hostage until effective vaccines were developed and released. Although generally safe, novel therapies are not devoid of risk. For instance, venous thromboembolic complications of SARS-CoV-2 vaccine have been widely documented.¹ This letter narrates the rare case of peripheral arterial thrombosis after coronavirus disease 2019 immunization.

A 63-year-old man with a past medical history of former smoking, coronary artery disease treated with percutaneous intervention on dual antiplatelet therapy, and negative screening ultrasound examination for abdominal aortic aneurysm developed severe left foot pain and discoloration 2 days after his second dose of the BNT162b2 SARS-CoV-2 vaccine (Comirnaty, Pfizer-BioTech). After a protracted 1-month course, a vascular evaluation revealed a diminished ipsilateral ankle-brachial index (0.62 vs 1.29 on the right). Further imaging demonstrated a thrombosed 1.9-cm left popliteal artery aneurysm (PAA) with intact three-vessel runoff and focal dilation of the right popliteal artery to 10 mm without thrombosis (Fig). He was taken to the operating room for revascularization and underwent a distal superficial femoral artery to below-knee popliteal artery bypass with autologous vein graft and PAA ligation. After bypass grafting, the left dorsalis pedis pulse was restored. The patient recovered well and remains without symptoms after 4 months with a widely patent bypass graft on surveillance duplex ultrasound examination.

Most often asymptomatic, aneurysmal degeneration of the popliteal artery carries a significant risk of thrombosis and ischemia.² To prevent limb loss from thrombosis, the Society for Vascular Surgery recommends elective repair of PAA measuring more than 2 cm in diameter.³ In this case, the patient developed the signs of PAA thrombosis 2 days after vaccination against SARS-CoV-2. Its occurrence after vaccination could, of course, be coincidental. However, the classic nature and temporal presentation of the patient's symptoms are noteworthy. Overall, the World Health VigiBase databank reports 0.13 cases of

arterial thrombotic events per 1 million vaccinated person-days.⁴ The risk of arterial thrombosis, especially in patients with propensity from serological or arterial pathology, is low but not zero. In this new era of the rapid development and distribution of novel molecular therapies, physicians should remain vigilant for potentially serious adverse effects and appropriately investigate unusual patient complaints.

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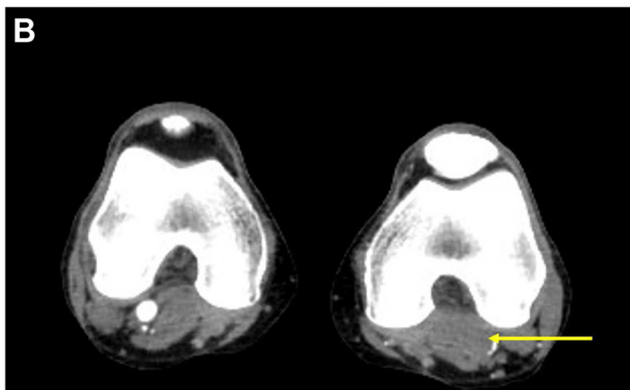


Fig. Computed tomographic angiogram of a 63-year-old man with left popliteal aneurysm thrombosis after vaccination against SARS-CoV-2. **(A)** Anteroposterior reconstruction of the femoropopliteal segments. Note the thrombosis of the left popliteal artery (arrow). **(B)** Cross-sectional view at the level of the knee. Note the thrombosis of the left popliteal aneurysm measuring 1.9 cm in diameter (arrow).