

Received: 2021.12.17

Accepted: 2022.02.28


Available online: 2022.03.01

Published: 2022.04.12

Pancreas Allograft Thrombosis as a Post-COVID-19 Complication in a Diabetic Patient After Pancreas Transplantation

Authors' Contribution:

Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

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Financial support: None declared
Conflict of interest: None declared

Arterial and venous thrombosis of pancreatic allografts is a rare complication in the late post-transplantation period. In addition to traditional thrombosis risk factors, SARS-CoV-2 infection predisposes patients to thrombotic diseases in both arterial and venous vessels. Transplant patients with a history of COVID-19 should be carefully monitored for arterial embolism and graft vein thrombosis. Early detection of this complication in patients after transplantation allows a chance to save the organ. Thromboprophylaxis with low molecular weight heparin is of great importance.

Keywords: COVID-19 • Embolism and Thrombosis • Pancreas Transplantation

Full-text PDF: <https://www.annalsoftransplantation.com/abstract/index/idArt/935863>

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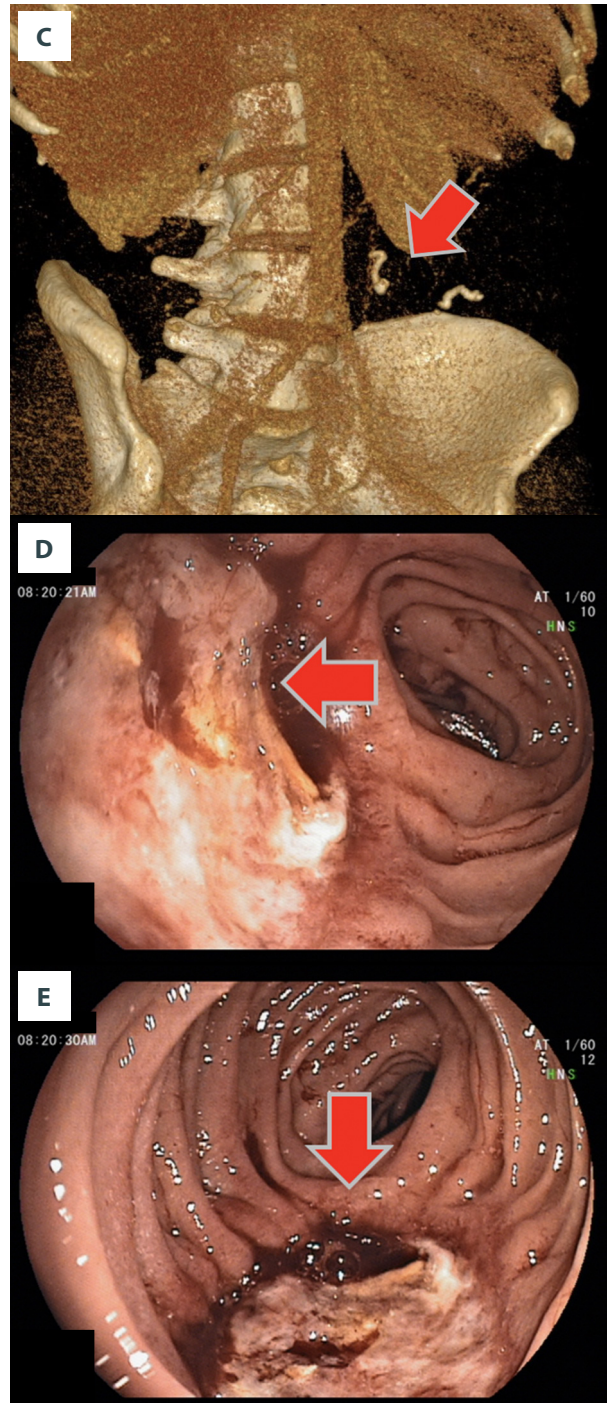
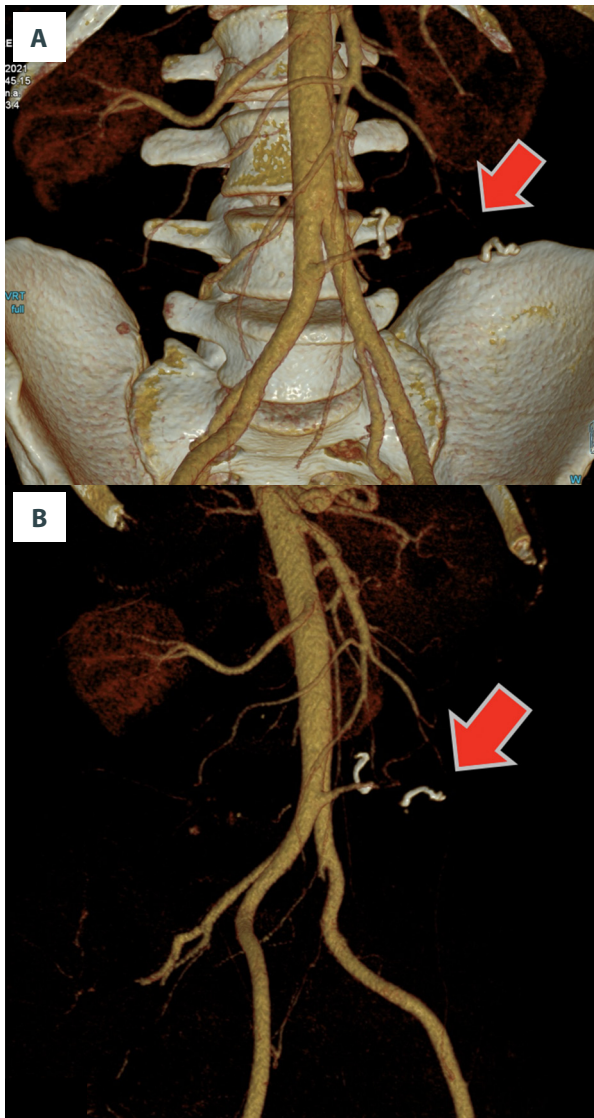
Dear Editor,

The SARS-CoV-2 pandemic has caused a huge overload on the healthcare system worldwide [1]. From March 4th 2020 until December, 7th 2021 the total number of COVID-19 cases in Poland reached 3,684,671 million. According to the Polish Ministry of Health 85,700 infected patients died, most of them had been suffering from concurrent disease. [2] The mortality rate from COVID-19 in Polish population is ~2.5%.

An increase of thrombotic and thromboembolic complications has been associated with COVID-19 in both arterial and venous systems. [3,4]

Patients after transplantation suffering from COVID-19 are at a higher risk of mortality (24-42%) and complications than the average population. [5] Recently, in our Center, there was

a case of a PTA recipient with diabetes t1 that developed venous and arterial thrombosis 4 months after COVID-19, resulting in graft necrosis and finally in pancreas graftectomy (Figure 1A-1G). Our 6-year post-PTA patient had no history of thromboembolism or other risk factors apart from diabetes t1 and a history of COVID-19. Earlier, in 2020 and 2021, 2 cases of infarction of a transplanted kidney in patients suffering from COVID-19 were described. Moreover, both cases occurred



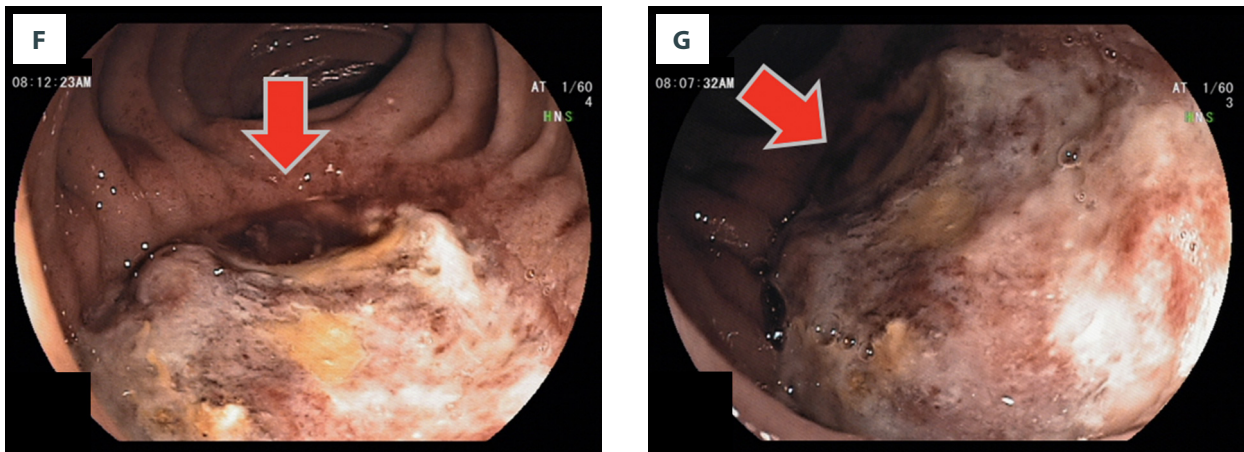


Figure 1. (A-C) 3D vascular reconstructions of Computed Tomography. A, B – Arterial phase. C – Venous phase. The marks show the localization of pancreatic graft. It is not visible because of the absence of blood flow. (D-G) Images from gastroduodenoscopy. Marks show the necrosis of the mucosa of transplanted duodenum with central ulceration.

in obese transplant recipients with diabetes t 1. The first case – a man with DM t1 13 years after kidney and pancreas transplantation who had a segmental infarction of the kidney [6], and the second case was a woman with DM t1 6.5 months after kidney transplantation, who lost the graft as a result of a renal artery infarction. [7] Identifiable risk factors linking these cases are the post-transplant status for t1 diabetes and obesity.

Conclusions

Transplant patients who have experienced COVID-19 should be carefully monitored for the occurrence of graft arterial and

vein embolism. Early detection of these complications in patients after organ transplantation gives an opportunity to save the organ. Thromboprophylaxis with low molecular weight heparin is highly important and should be continued in high-risk patients (obese, with persistent d-dimer levels >1000) for a minimum of 2 weeks (preferably 4-6 weeks) after reaching the convalescent status.

Declaration of Figures' Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

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