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Imaging presentation and therapeutic management of chronic pancreatitis vascular complications: A single centre experience

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Chronic pancreatitis is characterized by recurrent attacks of acute inflammation. Vascular complications are relatively rare, potentially lethal, including venous thrombosis and pseudo aneurysms of arterial blood vessels, while in some cases fistulous communication may form between pseudo cysts or walled-off pancreatic necrosis with the portal venous system. Pancreatic enzymes, as well as infected, per pancreatic necrosis damage the walls of the main arterial blood vessels resulting in the formation of pseudo aneurysm. Unlike real aneurysms, the risk of rupture of pseudo aneurysms is higher due to the thinner wall and represents the most serious complication of pseudo aneurysms that have developed from necrotic pancreatitis. To the best of our knowledge, there is no specified period of time in which a rupture could occur. The main symptoms of this life-threatening condition are melena, bleeding in the pancreatic or bile duct, or a massive haemorrhage in the peritoneal cavity with acute abdominal pain and shock. Interventional radiology provides extraordinary diagnostic and therapeutic possibilities for precise identification and localization of a blood vessel that is engaged in the formation of the pancreatic pseudo aneurysm. Furthermore, the exclusion of that blood vessel from circulation by stenting or embolization methods is possible at the same time. The aim of this study is to point out the importance of monitoring these patients with chronic pancreatitis, timely detection of complications and implementation of minimally invasive treatment procedures provided by modern interventional radiology. From June 2019 until June 2022 pseudo aneurysms due to chronic pancreatitis were detected in ten patients who underwent abdominal ultrasound, CT and/or MRI examination, followed by endovascular embolization or open surgery. Eight patients with pseudo aneurysm of the pancreatic duodenal arcade were successfully treated with endovascular embolization, performing specific "sandwich" technique where both inflow and outflow of the pseudo aneurysm were embolized with coils. One patient underwent Emergency surgery due to the size of the pseudoaneurysm of the splenic artery and the impending rupture, so laparotomy with distal pancreatectomy and splenectomy was performed. A Covid-positive patient died due to the suddenly rupture of the pseudoaneurysm and penetration of the hemorrhagic-necrotic collection into the duodenum with consequent enterorrhagia. Follow-up of patients with chronic pancreatitis, timely detection of vascular complications and their minimally invasive treatment are of great clinical importance. The interventional-radiological approach is the gold standard, where in the same act precise identification of the blood vessel responsible for pseudoaneurysm, and endovascular embolization or implantations of a covered stent are performed. In advanced cases where there is a high risk of rupture and bleeding, open surgery is the only option.

Biography

Milica Mitrovic has been employed at the Emergency Center, Clinical Center of Serbia since 2011. From 2015, she has been working as radiologist at the Department of Digestive Radiology, First Surgical Clinic, where she gained extensive experience in diagnosing diseases of the digestive tract. In the field of internal medicine, she was part of a research team which analyzed the effect of sodium thiosulfate in the treatment of vascular calcifications of the main blood vessels. Analysis of native MDCT examinations and evaluation of Agatston calcium score showed regression of vascular calcifications after 6 months in patients on a chronic hemodialysis program. This experimental examination started the possibility of further scientific evidence in the field of nephrology. So far she has published a total of 21 professional scientific papers.