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Clinical Image

Transcatheter Embolization for Ruptured Aneurysm of Pancreaticoduodenal Artery

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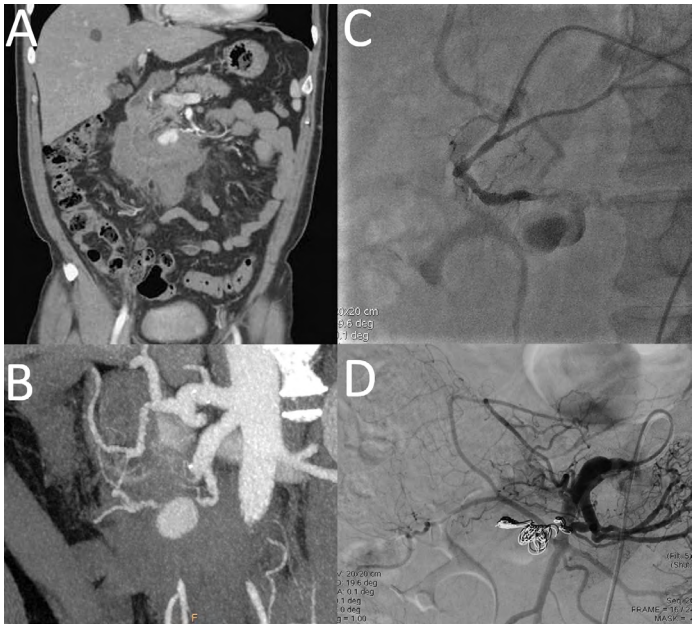

Figure 1: Axial and coronal views of computed tomographic angiography (CTA) demonstrated a ruptured saccular pseudoaneurysm of inferior pancreaticoduodenal artery (PDA) with peritoneal hemorrhage (Panel A). Reconstruction image of CTA depicted a saccular pseudoaneurysm of inferior PDA (Panel B). Digital subtraction angiography disclosed a ruptured saccular pseudoaneurysm of inferior PDA (Panel C) with extravasation and the transcatheter embolization with coil was carried out successfully (Panel D).

Abstract

Visceral arterial aneurysms are rare and only 2% involve the pancreaticoduodenal artery (PDA). The etiologies of PDA aneurysms include congenital or atherosclerosis, celiac axis stenosis, pancreatitis, mycotic, trauma, or fibromuscular hyperplasia. If PDA aneurysm ruptures, it will result in fatal hemorrhage with high mortality rates. Although abdominal computed tomographic scan is a valuable examination, the selective angiography is the criterion standard to diagnose PDA aneurysm. Operative treatment can be invasive for patients with ruptured PDA aneurysms. Endovascular therapy with embolization or sent in selected patients is an alternative mandatory method.

Keywords: Aneurysm; Computed tomography; Embolization; Pancreaticoduodenal artery

Case Presentation

A 54-year-old man, with a history of chronic pancreatitis associated with hypertriglyceridemia, presented to our emergency department with a 10-day history of abdominal pain. Computed tomographic scan of angiography (CTA) demonstrated a ruptured

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saccular aneurysm of inferior pancreaticoduodenal artery (PDA) with peritoneal hemorrhage and digital subtraction angiography disclosed a ruptured saccular aneurysm of inferior PDA with extravasation (Figure 1). The transcatheter embolization with coil was carried out successfully.

Discussion

Cases of visceral artery aneurysms are a rare clinical entity of vascular disease found incidentally in 0.1% to 2% of the general population and only 2% involve the PDA [1-3], The etiologies of PDA aneurysms include degeneration (atherosclerosis), hereditary diseases, inflammation (pancreatitis and cholecystitis), infection (abscess and mycotic), vasculitis, trauma (iatrogenic or penetrating injury), collagen vascular disease, segmental arterial mediolysis and malignancy [1,2,4]. The incidence of PDA aneurysm associated with degeneration and pancreatitis had reported to be 90% and 14%, respectively [5]. Many cases of ruptured PDA aneurysms were few than 10 mm in diameter. The size of PDA aneurysm could not be a predictor of its rupture and only male gender was associated with the risk of PDA aneurysm rupture [3-5]. If PDA aneurysm ruptured, it would result in fatal hemorrhage with high mortality rates and reach up to 100% if untreated.4 Although abdominal CTA was a valuable examination, the selective angiography was the criterion standard to diagnose PDA aneurysm[2,4]. If unstable hemodynamic, an elective open surgical treatment could be considered in patients with ruptured PDA aneurysms [5,6]. In the era of minimally invasive therapeutic approaches, endovascular therapy with embolization or sent in selected patients was an alternative mandatory method. The successful rate of endovascular therapy for ruptured PDA aneurysm with stable hemodynamics has reported to be 80% to 100% [3-5].

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