

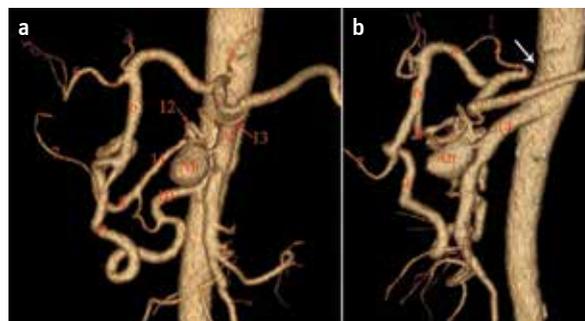
## Aneurysm of the dorsal pancreatic artery associated with celiac artery occlusion

To the Editor,

A-66-year-old man with history of hypertension presented with an abdominal pain. Physical examination and laboratory studies showed no abnormality. Abdominal ultrasound showed an anechoic lesion close to the pancreatic head, which was suspected of being an aneurysm. Multidetector computed tomographic (MDCT) angiography revealed enlarged pancreaticoduodenal arcade, an aneurysm of the dorsal pancreatic artery (DPA) 20x24 mm in diameter, and occlusion of the celiac artery (CA) (Figure 1). Transcatheter arterial embolization was planned for treatment of the aneurysm. But, the patient refused to endovascular or surgical treatment.

Aneurysm of the DPA associated with CA occlusion is a rare condition. The association of the CA stenosis or occlusion and aneurysm of DPA or inferior pancreaticoduodenal (IPDA) artery is not coincidental. With the stenosis or occlusion of the CA; liver, spleen and stomach is supplied by the superior mesenteric artery via the collateral pathway from the pancreaticoduodenal arcades. The chronic increase of blood flow through pancreaticoduodenal arteries weakens the arterial wall, causing dilatation that leads to true aneurysm formation (1,2).

Most of the patients are asymptomatic and the aneurysm is usually detected incidentally. Preoperative identification of the exact origin and size of the aneurysms is important. Multidetector computed tomographic (MDCT) angiography has emerged as a crucial imaging modality in the evaluation of the abdominal vascular structures. Two- and three-dimensional MDCT images provide better definition and display of the anatomy and course of the abdominal vessels, which resembles traditional arteriograms and provides the surgeon with a three-dimensional model of the patient's arterial anatomy (3,4).



**Figure 1. a, b.** Volume rendering (a,b) MDCT images show an enlarged pancreaticoduodenal arcade, an aneurysm (An) of the dorsal pancreatic artery and occlusion of the celiac artery (white arrow). (1=splenic artery, 2=left gastric artery, 3=common hepatic artery, 4=left hepatic artery, 5=right hepatic artery, 6=gastroduodenal artery, 7=right gastroepiploic artery, 8=anterior superior pancreaticoduodenal artery, 9=posterior superior pancreaticoduodenal artery, 10=inferior pancreaticoduodenal artery, 11=horizontal branch of dorsal pancreatic artery, 12=vertical branch of dorsal pancreatic artery, 13=transverse pancreatic artery, 14=superior mesenteric artery).

Because of poor diagnosis after rupture, treatment of DPA aneurysms is necessary even for asymptomatic patients. The aneurysms can be treated through endovascular techniques or by surgery. Surgical management includes ligation and resection of the aneurysm with concomitant revascularization procedures. No recurrence of aneurysms even in association with occlusion of the CA is described after simple ligation or embolization. So, current opinion in this issue is that an additional repair of CA occlusion is unnecessary due to increased operative risk (5,6).

In conclusion, aneurysms of the DPA associated with occlusion of the CA is a rare event, but the risk of rupture and the high mortality rate seen in this setting require early diagnosis and management. An accurate diagnosis of this condition can be easily and reliably made by MDCT angiography. MDCT angiography enables high quality three-dimensional reconstructed images and al-

**Address for Correspondence:** Aysel Türkvatn, Department of Radiology, Türkiye Yüksek İhtisas Hospital, Ankara, Turkey  
E-mail: aturkvatan@yahoo.com

**Received:** August 02, 2012 **Accepted:** October 02, 2012

© Copyright 2014 by The Turkish Society of Gastroenterology • Available online at www.turkjgastroenterol.org • DOI: 10.5152/tjg.2014.4023

lows noninvasive determination of the exact location and the size of the aneurysm.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Aysel Türkvatan<sup>1</sup>, Mehmet Akif Türkoğlu<sup>2</sup>, Gökhan Yüce<sup>1</sup>**

<sup>1</sup>Department of Radiology, Türkiye Yüksek İhtisas Hospital, Ankara, Turkey

<sup>2</sup>Department of Gastroenterological Surgery, Türkiye Yüksek İhtisas Hospital, Ankara, Turkey

## REFERENCES

1. Kalva SP, Athanasoulis CA, Greenfield AJ, et al. Inferior pancreaticoduodenal artery aneurysms in association with celiac axis stenosis or occlusion. *Eur J Vasc Endovasc Surg.* 2007; 33: 670-5.
2. Bellosta R, Luzzani L, Carugati C, Melloni C, Sarcina A. Pancreaticoduodenal artery aneurysms associated with celiac axis occlusion. *Ann Vasc Surg* 2005; 19: 534-9.
3. Horton KM, Smith C, Fishman EK. MDCT and 3D CT angiography of splanchnic artery aneurysms. *Am J Roentgenol* 2007; 189: 641-7.
4. Uchiyama D, Yoshida S. Dorsal pancreatic artery aneurysm with celiac trunk occlusion. *Intern Med.* 2012; 51: 667-8.
5. Hildebrand P, Esnaashari H, Franke C, Bürk C, Bruch HP. Surgical management of pancreaticoduodenal artery aneurysms in association with celiac trunk occlusion or stenosis. *Ann Vasc Surg* 2007; 2: 10-5.
6. Ducasse E, Roy F, Chevalier J, et al. Aneurysm of the pancreaticoduodenal arteries with a celiac trunk lesion: current management. *J Vasc Surg* 2004; 39: 906-11.