

# Dumbbell-Shaped Abdominal Aortic Aneurysm Causing Duodenal Obstruction

Defne Güneş Ergi, MD; Anıl Ziya Apaydın, MD; Umit Kahraman, MD;  
Serkan Ertugay, MD

Ege University Faculty of Medicine, Department of Cardiovascular Surgery, Izmir, Turkey

**A**n 89-year-old male patient with a history of dialysis-dependent chronic renal failure and coronary arterial disease presented to the emergency department with abdominal pain, a sensation of nausea, and vomiting of bilious contents. A computed tomographic scan was performed and revealed 2 saccular aneurysms of the infrarenal abdominal aorta with dimensions of 10.1 and 7.9 cm that were connected via a normal-sized aorta with a shape resembling a dumbbell (Fig. 1 and Fig. 2). The patient was referred to the department of cardiovascular surgery because the primary condition was thought to be the aortic aneurysms obstructing the proximal part of the intestinal tract. As a result of multidisciplinary assessments, it was decided that an open abdominal aortic aneurysm (AAA) surgery would be performed because an endovascular procedure was not an option, owing to anatomical unsuitability (Fig. 3). During exploration, moderate distention of the first and second part of the duodenum was noted. There was a denuded serosal area 5 mm in diameter at the posterior wall of the third part, which was repaired by primary suturing.

## Comment

Large AAAs may disturb the adjacent abdominal structures and intestinal compression.<sup>1</sup> Related symptoms, such as nausea, bilious vomiting, and weight loss, may arise. Duodenal obstruction caused by AAAs is rare and is named aortoduodenal syndrome;

### Citation:

Ergi DG, Apaydın AZ, Kahraman U, Ertugay S. Dumbbell-shaped abdominal aortic aneurysm causing duodenal obstruction. *Tex Heart Inst J*. 2022;49(6):e217668. doi:10.14503/THIJ-21-7668

### Corresponding author:

Defne Güneş Ergi, MD, Department of Cardiovascular Surgery, Ege University Faculty of Medicine, Kazım Dirik, No: 9, 35100, Izmir, Turkey

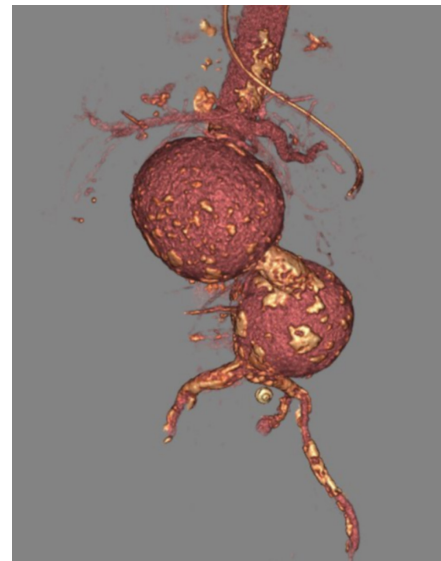
### E-mail:

[gunes\\_ergi@hotmail.com](mailto:gunes_ergi@hotmail.com)

© 2022 by the Texas Heart Institute, Houston



**Fig. 1** Preoperative multiplanar view of the 2 saccular aneurysms of the infrarenal abdominal aorta, 10.1 and 7.9 cm in diameter, respectively, with a normal-size aorta between them that resembles a dumbbell shape.



**Fig. 2** Preoperative 3-dimensional reconstruction of the computed tomography of the abdominal saccular aneurysms.



**Fig. 3** Intraoperative view of the dumbbell-shaped abdominal saccular aneurysm.

it is characterized by stretching of the third part of the duodenum adjacent to an underlying AAA. Osler first described the syndrome in 1905,<sup>2</sup> and fewer than 40 cases have been described in the literature, as reported by Taylor et al in 2016.<sup>3</sup> We present a rare case of dumbbell-shaped AAA that caused intestinal obstruction.

**Published:** 30 November 2022

**Conflict of Interest Disclosures:** None.

**Funding/Support:** None.

## References

1. Esposito A, Menna D, Mansour W, Sirignano P, Capoccia L, Speziale F. Endovascular treatment of a small infrarenal abdominal aortic aneurysm causing duodenal obstruction: case report and literature review. *Vascular*. 2015;23(3):281-284. doi:10.1177/1708538114542267
2. Osler W. Aneurysm of the abdominal aorta. *Lancet*. 1905;166(4285):1089-1096. doi:10.1016/S0140-6736(01)69613-2
3. Taylor SG, van Rij AM, Woodfield JC. Duodenal obstruction associated with an abdominal aortic aneurysm. *J Vasc Surg Cases Innov Tech*. 2016;2(3):134-136. doi:10.1016/j.jvscit.2016.05.008