

# Aneurysm of the Coeliac Artery: A Case Report

## ÇÖLYAK ARTER ANEVİRİZMASI: OLGU SUNUMU

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### Summary

The coeliac artery aneurysms are rare. A case of coeliac artery aneurysm treated successfully by aneurysmectomy and 6 mm knitted dacron graft interposition between coeliac artery pedicle and the common ostium of hepatic and splenic arteries is presented. Surgery was performed through a midline laparotomy. The patient recovered uneventfully after surgery and arteriography on the sixth postoperative day revealed a satisfactory result.

**Key Words:** Coeliac artery aneurysm,  
Splanchnic artery aneurysms

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### Özet

Çölyak arter anevrizmaları nadirdir. Anevrizmektomi ve çölyak arter orijini ile hepatic ve splenic arterlerin ortak ostiumu arasına 6 mm knitted dakron greft interpozisyonu ile başarıyla tedavi edilen çölyak arter anevrizma olgusu sunuldu. Operasyon ortahat laparotomi ile yapıldı. Hasta cerrahi sonrası normale döndü ve postoperatif 6. günde yapılan arteriografide greft açık olarak gösterildi.

**Anahtar Kelimeler:** Çölyak arter anevrizması,  
Splanchnik arter anevrizmaları

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Aneurysms of the coeliac artery are relatively rare lesions consisting 4% of all splanchnic aneurysms (1). Although more are being reported today splanchnic aneurysms remain unusual. There are 129 cases report in the literature until 1999 (2). Coeliac artery aneurysms have a significant potential to rupture or erode into an adjacent viscera, resulting in life-threatening hemorrhage. Therefore it needs surgical intervention. In this report we describe a coeliac artery aneurysm (CAA) which was treated with aneurysmectomy and reconstruction with a graft interposition.

### Case Report

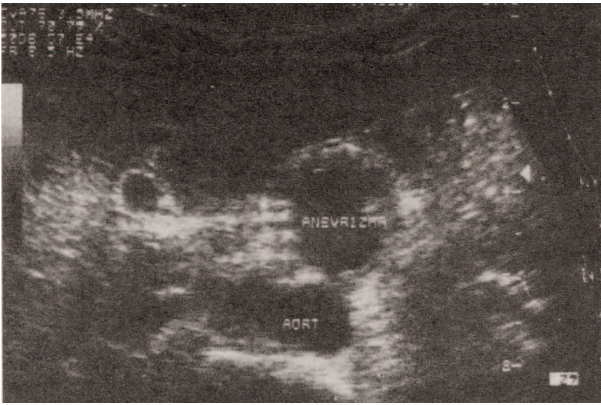
A 36 - year - old man was admitted to our clinic complaining of epigastric pain of 3 months dura-

tion. His pain had been worse over the preceding two months and he had lost 12 kg with vomiting after eating during the same period. This manifestations was attributed to a peptic duodenal ulcer diagnosed by an esogastroduodenal transit study at another institution 2 months ago. Since then, he had been medicated with H<sub>2</sub> receptor antagonists. Physical examination was unremarkable except a loose pulsation felt in the epigastric region. Duplex sonography confirmed a coeliac artery aneurysm measuring 26x28x29 mm in front of the abdominal aorta (Figure 1). A preoperative digital subtraction angiography (DSA) showed an aneurysm originating from the coeliac artery with a well defined pedicle which extended as far as the proximal hepatic and splenic arteries (Figure 2).

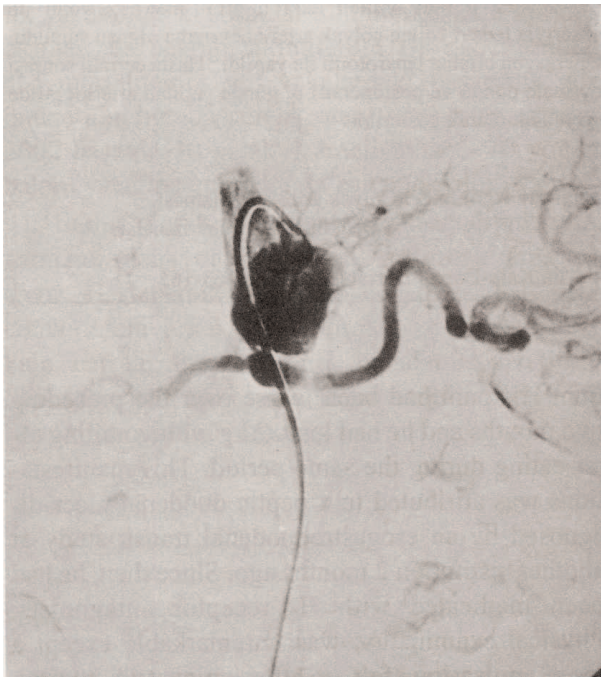
Owing to small frame patient and a small aneurysm, surgery was performed via midline laparotomy with transection of the diafragmatic crus and the median arcuate ligament. After intradiaphragmatic control of the aorta was obtained, the coeliac aneurysm, adjacent aorta, hepatic and

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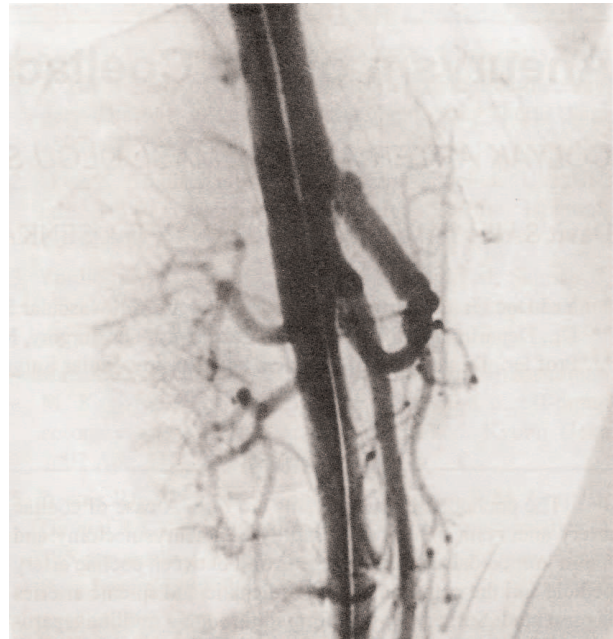


**Figure 1.** Duplex Sonography showing a coeliac artery aneurysm measuring 26x28x29 mm in front of the abdominal aorta.



**Figure 2.** DSA revealing a coeliac artery aneurysm starting from a well-defined pedicle and lasting with normal hepatic and splenic arteries.

splenic arteries were all exposed. The aneurysm began 1 cm from the origin of the coeliac artery. The aneurysmal coeliac artery divided into a normal hepatic and splenic arteries. Because the back bleeding was good enough at the left gastric artery, it was ligated. After the aorta was taped above and below the origin of the coeliac axis, coeliac artery origin, hepatic and splenic arteries were clamped. Aneurysmectomy was performed and no mural



**Figure 3.** DSA showing a patent graft between the coeliac artery origin and common ostium of the hepatic and splenic arteries.

trombus was found. A 4 cm long 6 mm knitted dacron graft was interposed between the pedicle of the coeliac artery and the common ostium of hepatic and splenic arteries. Liver functions remained normal throughout the postoperative period. Histological examination confirmed arterial dysplasia with medial degeneration. The patient was discharged on the seventh postoperative day without complications and the DSA revealed a satisfactory patent graft (Figure 3). Two weeks later he suffered from a complex pseudoaneurysm at the arteriography site of the femoral artery which was treated with a saphenous vein interposition graft.

### Discussion

Aneurysms of the coeliac artery are quite uncommon. The true incidence remains unknown. The first successful surgical repair was reported in 1958 by Shumacker and Siderys (3). In the past, most patients presented with intraabdominal bleeding and hemorrhagic shock. Ruptured CAA was diagnosed at laparotomy incidentally. Today with the aid of modern diagnostic tools, it can be diagnosed before rupture. These aneurysms are usually symptomatic such as epigastric pain, nausea, swelling and vomiting, but these symptoms are subtle. Other

associated symptoms include intestinal angina, gastrointestinal bleeding and jaundice. An association with duodenal ulceration has been previously reported as it was the case in our patient, it creates dilemma for diagnosis (4).

Although duplex sonography confirms the diagnosis, selective arteriography is an essential method as it delineates the anatomy of the aneurysm, vascular supply of the viscera and collateral circulation in order to plan the type of surgery. The clinical course of the CAA's are unpredictable and the mortality rate is about 40 % in patients with rupture compared to 5% in nonruptured aneurysms (5). Thus, surgical treatment is mandatory and should be offered to even asymptomatic patients. The presence of a CAA is considered sufficient indication to repair except small aneurysms in high risk patients (6). Transcatheter embolisation can be an alternative to aneurysmectomy in high risk patients having contraindications to surgery, with good collateral circulation to the proper hepatic artery from superior mesenteric artery. Rengo et al (7) reported successful transcatheter embolisation a CAA of 6 cm in diameter, but didn't forget to mention that it's vital to ensure that there is no blood flow in the aneurysm after the procedure otherwise the risk of rupture remains.

Although most authors suggest a thoracoabdominal incision with aneurysm being approached through the lesser sac, a midline laparotomy particularly in thin patients as it's the case in our patient, offers good security with a better common hepatic artery control. Especially in smaller aneurysms, it's relatively easy to obtain good proximal and distal vascular control which indicates the importance of

an early diagnosis of the disease in order to achieve better surgical results. Simple ligation has been undertaken in 17% to 35% of the reported cases (6). But it is very important to preserve visceral especially hepatic blood flow during repair. The common hepatic artery is the most important of the branches arising from the coeliac trunk. Ligation of the common hepatic artery leads to hepatic ischemia if the the flow of the superior mesenteric artery is compromised (5). We believe that hepatic revascularisation is preferable. Resection and anastomosis, or direct reimplantation to the aorta are sometimes possible and done in the presence of a relatively normal and lengthy proximal coeliac artery. But in most of the cases a saphenous vein or a synthetic graft should be interposed in order to prevent undue tension to the anastomosis.

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