

Ruptured Aneurysm of Left Paracolic Branch of Superior Mesenteric Artery: Report of an Uncommon Case

Süperior Mezenterik Arterin Sol Parakolik Dalının Rüptüre Anevrizması: Nadir Görülen Bir Olgu

Hikmet İYEM, MD,^a
Suat BÜKET, MD^b

^aDepartment of Cardiovascular Surgery,
Dicle University, Faculty of Medicine,
Diyarbakır

^bDepartment of Cardiovascular Surgery,
Kent Hospital, İzmir

Geliş Tarihi/Received: 17.06.2008
Kabul Tarihi/Accepted: 27.09.2008

Yazışma Adresi/Correspondence:

Hikmet İYEM, MD
Dicle University Faculty of Medicine,
Department of Cardiovascular Surgery,
Diyarbakır,
TÜRKİYE/TURKEY
hikmetiyem@gmail.com

ABSTRACT A 56-years-old male patient admitted to our emergency room with hypovolemic shock. He had the history of abdominal pain, nausea, vomiting and bloody defecation for eight hours. Multislice computed tomography (MSCT) was performed. MSCT revealed a ruptured aneurysm of 60 x 56 mm of left superior paracolic branch of superior mesenteric artery (SMA). The abdominal cavity was opened by median abdominal incision above and under the level of umbilicus. A giant ruptured aneurysm of left paracolic branch of SMA was seen. The ruptured aneurysmatic sac was resected and remained tissue were sutured primarily. Patient was extubated on the 18th hour of postoperative period. He was discharged uneventfully on the 10th day of hospitalization. We aimed to emphasise the importance of early radiological recognition of ruptured aneurysm of left paracolic branch of SMA and its early surgical treatment.

Key Words: Mesenteric artery, superior; technology, radiologic; aneurysm, ruptured

ÖZET Elli altı yaşında bir erkek hasta hipovolemik şok tablosunda acil servisimize başvurdu. Hastanın sekiz saatir karın ağrısı, bulantı, kusma ve kanlı dışkılama şikayeti mevcuttu. Çok kesitli bilgisayarlı tomografi yapıldı (ÇKBT). ÇKBT'da superior mezenterik arter (SMA)'ın sol parakolik dalında 60x56 mm'lik rüptüre anevrizma tespit edildi. Hasta göbek altı ve göbek üstü median insizyon yapılarak batin boşluğu açıldı. Dev superior mezenterik arterin sol parakolik dalında rüptüre bir anevrizma bulundu. Rüptüre anevrizmatik kese çıkarıldı ve kalan doku primer olarak sütüre edildi. Postoperatif 18 saat sonra hasta ekstübe edildi. Hasta yatışının onuncu gününde sorunsuz olarak taburcu edildi. Bu çalışmada, SMA'nın sol parakolik dalının rüptüre anevrizmasının erken radyolojik tanısının ve erken cerrahi müdahalenin önemini vurgulamayı amaçladık.

Anahtar Kelimeler: Süperior mezenterik arter; radyolojik teknoloji; rüptüre anevrizma

Türkiye Klinikleri J Med Sci 2010;30(1):410-2

Visceral arterial aneurysm is an uncommon condition. They involve splenic artery in 60%, hepatic artery in 25% and superior mesenteric artery in 5% of the cases. It is usually found accidentally during autopsies or abdominal radiological examinations. Its most frequent complication is its rupture and seen in 3-10% of cases.¹ Successful treatment of an aneurysm of the SMA was first reported in 1953 by DeBakey and Cooley.² The aneurysm is excised after collateral circulation was ensured to be adequate. This is the second case that was treated surgically. The clinical picture of SMA aneurysms is not characteristic. Published cases suggest that epigastric pain associated with or followed by the development of an epi-

gastric mass in a patient with bacterial endocarditis should arise the suspicion of a mycotic aneurysm of the SMA.²⁻⁴ In this case, the involved vessel was not excised, but restored by aneurysmorrhaphy as described by Matas.⁵ We aimed to emphasise the importance of early radiological recognition of the ruptured aneurysm of the left paracolic branch of SMA and its early surgical treatment.

CASE REPORT

A detailed written informed consent was obtained from the patient. A 56-years-old male patient admitted to our emergency room with hypovolemic shock. He had abdominal pain which was started in the same morning in addition to nausea, vomiting and bloody defecation. Free fluid was found on his abdominal ultrasonography at the level of pelvis. A ruptured aneurysm of left superior paracolic branch of SMA with size of 60 x 56 mm was found on abdominal MSCT (Figure 1-4). Pulses of both femoral arteries of the patient were palpable. Hemotocrit was 28% on complete blood count examinations. Serum amylase level was high and the other parameters were normal.

Patient was immediately taken into the operating room. We prepared the cell caver. We performed left thoracotomy first and clamped the descending aorta. Then we performed a median abdominal incision above the level of umbilicus. To minimise the contact with the intestine, first of all we tilted the head of the patient 30° upwards and provided that intestines moved from pelvis into the abdominal cavity. We aspirated the blood in the abdominal cavity into the cell caver. The pulse of SMA was palpable. We dissected Treitz ligament to

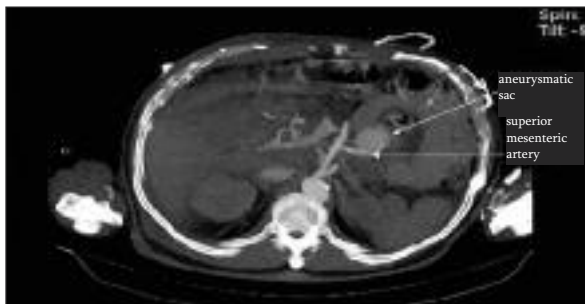


FIGURE 1: The origin of the superior mesenteric artery and continuity of paracolic artery with aneurysm.

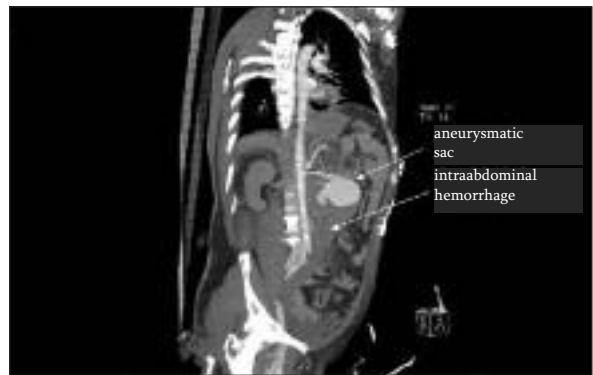


FIGURE 2: Continuity of paracolic artery with aneurysm in coronal oblique reconstruction.



FIGURE 3: Rupture side on the medial side of the aneurysm and diffuse intraabdominal hemorrhage in coronal oblique reconstruction.

mobilize SMA proximally easier. We found the giant aneurysm of left paracolic branch and resected the aneurysmatic sac. Then we declamped the descending aorta. Patient was taken into intensive care unit with inotropic support. We decreased the amount of inotropic support by normalising the fluid balance during the postoperative period. Patient was extubated on the 18th hour of postoperative period.

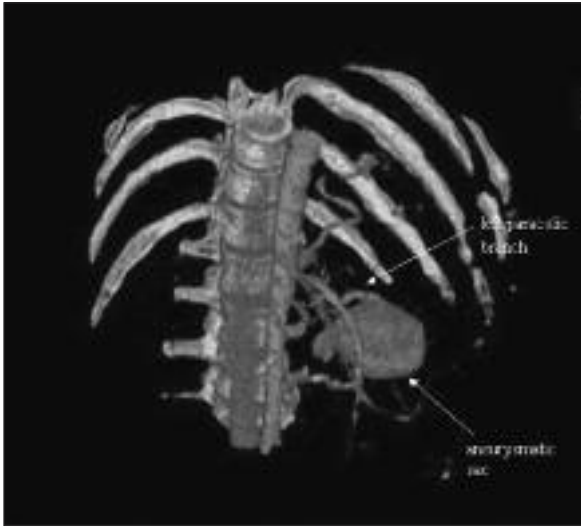


FIGURE 4: Aneurysm image in the coronal oblique 3D reconstruction.

DISCUSSION

Aneurysmal degeneration of the SMA occurs infrequently, but when it occurs, mesenteric ischemia or aneurysm rupture may result. Although varying reports of thrombosis and rupture rates have been published by most authors, these events do not appear to be uncommon. However, some authors consider the risk of rupture of these aneurysms to be quite small.⁶ SMA aneurysms constitute 5% of visceral arterial aneurysms, and less than 0.5% of intraabdominal aneurysms.⁷ Due to its high risk of rupture, SMA aneurysms must be operated immediately once diagnosed. Most SMA aneurysms are symptomatic. The most frequent symptom is severe abdominal pain which increases gradually. Nausea, vomiting, jaundice, hemobilia and

gastrointestinal bleeding may occur occasionally. A pulsatile mass is observed in 50% of cases. The most fatal complication is aneurysm rupture and thrombosis. Physical findings, hematological investigations, echocardiography and ultrasound help the diagnosis, but the diagnosis is confirmed by CT scan and angiography.⁸ All diagnosed SMA aneurysms must be treated due to their high complication rates. Spontaneous rupture may occur in the up to 50% of the cases, and the overall perioperative mortality rate is up to 30%.⁹ In surgery, aneurysmectomy is usually performed with or without reconstruction of the involved vessel. The most common and feared complications of SMA aneurysm are bleeding, organ ischemia, and infection. The etiology of the aneurysm in our patient is not clear. He had no history of vascular or infectious diseases. Angiography showed enlarged diameters of the celiac trunk and its branches. In contrast to occlusive disease with formation of stenoses and arterial occlusions, atherosclerosis can also manifest as vessel elongation and dilatation.¹⁰ There were widespread atherosclerosis of thoracic, descending and abdominal aorta in our patient, and aneurysm developed secondary to atherosclerosis.

In conclusions, aneurysms involving the SMA are rare entities but carry a significant rupture risk. This risk appears to be higher than the risks reported in some series in the literature. To make an early and definitive diagnosis, imaging is very important in such emergency cases. Surgeon must perform a thoracotomy and clamp the descending aorta first and use cell caver to decrease the amount of bleeding.

REFERENCES

- Shih A, Golden M, Mohler ER 3rd. Splenic artery aneurysm. *Vasc Med* 2002;7(2):155-6.
- De Bakey ME, Cooley DA. Successful resection of mycotic aneurysm of superior mesenteric artery; case report and review of literature. *Am Surg* 1953;19(2):202-12.
- Buchman RJ, Martin GW. Management of mycotic aneurysm of superior mesenteric artery. *Ann Surg* 1962;155:620-2.
- Poblacion D, Mckenty J, Campbell M. Mycotic aneurysm of superior mesenteric artery complicating subacute bacterial endocarditis: successful resection. *Can Med Assoc J* 1964;90:744-5.
- Matas R. Personal experiences in vascular surgery: a statistical synopsis. *Ann Surg* 1940;112(5):802-39.
- Blumenberg RM, David D, Slovak J. Abdominal apoplexy due to rupture of a superior mesenteric artery aneurysm: clip aneurysmorrhaphy with survival. *Arch Surg* 1974;108(2):223-6.
- Zimmerman-Klima PM, Wixon CL, Bogey WM Jr, Lalikos JF, Powell CS. Considerations in the management of aneurysms of the superior mesenteric artery. *Ann Vasc Surg* 2000;14(4):410-4.
- Kopatsis A, D'Anna JA, Sithian N, Sabido F. Superior mesenteric artery aneurysm: 45 years later. *Am Surg* 1998;64(3):263-6.
- Kanazawa S, Inada H, Murakami T, Masaki H, Morita I, Tabuchi A, et al. The diagnosis and management of splanchnic artery aneurysms. Report of 8 cases. *J Cardiovasc Surg (Torino)* 1997;38(5):479-85.
- Drescher R, Köster O, von Rothenburg T. Superior mesenteric artery aneurysm stent graft. *Abdom Imaging* 2006;31(1):113-6.