

Giant aneurysm of the splenic artery in an elderly man

Short report and review of the literature



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Giant aneurysm of the splenic artery in an elderly man. Short report and review of the literature

Splenic Artery Aneurysms (SAAs) are usually single and small lesions, and their size rarely exceed 3 cm. In a review of the literature from 1950 to date, only 18 aneurysms defined as "giant" were found in 15 reported papers.

CASE REPORT: A case of an 87-year-old man, successfully treated for a 7 cm wide aneurysm of the splenic artery is reported. Except for his age, the patient did not show any significant association with aneurysm-related diseases and was successfully submitted to en-bloc aneurysmectomy and splenectomy via open surgery.

KEY WORDS: Giant aneurysm, Splenic artery aneurysm, Visceral arteries aneurysm.

Introduction

The splenic artery is the third commonest site of intra-abdominal aneurysms, which account for about 60% of all visceral arteries aneurysms¹. Splenic Artery Aneurysms (SAAs) are usually single and small lesions, and their size rarely exceed 3 cm.; thus, aneurysms larger than 7-8 cm in size ("huge" or "giant aneurysms") must be considered extremely rare.

In the general population, on the basis of autopsy reports, the incidence of Splenic Artery Aneurysms (SAAs) ranges from 0.1 to 10%, with the highest rate in subjects over 60^{2,3}.

They are mainly found in women, particularly in those with a history of multiple pregnancies and in patients with portal hypertension, where they are observed in more than 10% of cases^{2,4}.

With minor incidence, different associations are reported in the Literature⁵⁻²⁸ (Table I).

Often asymptomatic, SAAs are detected incidentally during ultrasound or CT scan investigations or in emergency, due to a rupture. The risk of rupture increases

TABLE I – Review of less common related diseases

Author (Reference)	True SAAs - Etiology	Year
Bechstein ⁵	Cystic Media Necrosis	1989
Kamada ⁶	Hepatoma	1989
Colovic R ⁷	Gaucher's Disease	1989
Jimenez Lorente ⁸	Alpha 1 Antitrypsin Deficit	1989
Isemer ⁹	Small Bowel Diverticulum	1990
Froschle ¹⁰	Trauma	1991
Seesko ¹¹	Alpha 1 Antitrypsin Deficit	1991
Seiler ¹²	Chronic pancreatitis	1993
Dorval ¹³	Portal Aneurysm	1994
Billeter ¹⁴	Inflammatory	1994
Herman ¹⁵	Schistosomiasis	1994
Sendra ¹⁶	Mesenteric Steal Syndrome	1995
Dogan ¹⁷	Medial Degeneration	1995
Yoshitomi ¹⁸	Cushing Disease	1996
Dogan ¹⁹	Aortic Coarctation	1996
Kala ²⁰	Coagulopathy	1998
Tandon ²¹	Post-Traumatic Pancreatitis	1999
Corbi ²²	Mycotic	1999
Tazawa ²³	Lupus Erythematosus	1999
Kanagasundaram ²⁴	Kidney Polycystic Disease	1999
Furukawa ²⁵	Pancreatic Carcinoma	2000
Gaglio ²⁶	Alpha 1 Antitrypsin Deficit	2000
Ebaugh ²⁷	Fibromuscular Dysplasia	2001
Iki ²⁸	Chronic Pancreatitis	2003

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proportionally to the aneurysm's size and involves mortality rates from 25 to 36%²⁹⁻³¹.

We report a case of an 87-year-old man, successfully treated for a 7 cm wide aneurysm. Except for his age, the patient did not show any significant association with aneurysm-related diseases.

Pre-operative evaluation did not show important surgical risk factors and the patient was successfully submitted, via open surgery, to en-bloc aneurysmectomy and splenectomy.

Pre-operative and intra-operative findings and a review of the Literature are presented.

Case report

An 87-year-old male patient was referred to us by a medical unit for treatment of a "giant" asymptomatic SAA, which had been diagnosed five years before but was discharged "due to the patient's age".

A strategy of "wait and see" was then preferred until a recent abdominal echography revealed a significant increase of the aneurysm, which had passed from 4.5 to 7 cm in the last 18 months.

The most significant findings of the patient's medical history were a chronic myelodysplasia, a mild nephrotic syndrome, already treated with cortisone, and a multiple cholelithiasis.

Physical examination was negative for a well defined pulsatile mass and pre-operative cardiovascular and respiratory investigations (ABP, echocardiography and pulmonary function tests) did not show significant risk factors for surgery. Angiography (Fig. 1), Color Doppler US (Fig. 2) and



Fig. 2.



Fig. 3.



Fig. 1.

Angio-CT Scan (Fig. 3) revealed a large (6.5-7 cm.) sacular aneurysm in correspondence of the middle-distal third of the splenic artery. The aneurysmal lumen was free of thrombosis and its wall appeared thin, with a few scattered calcifications.

The visceral arteries and the aorta, as well as the splenic artery, proximal and distal to the aneurysm, did not show specific findings of a severe atherosclerotic disease. A moderate splenomegaly (14 cm x 10 cm.) was also observed.

The patient was then operated on by a left subcostal access, extended to the right side in order to perform a simultaneous cholecystectomy.



Fig. 4.

The inspection of the epiploic retrocavity demonstrated an intense fibrous reaction involving the proximal splenic artery and the aneurysm itself, while the distal splenic artery was substantially free from adhesions (Fig. 4). Once proximal arterial control was achieved, a medial reflection of the spleen and pancreas allowed a safe dissection of the aneurysm from the pancreatic tail, followed by an en-bloc splenectomy and aneurysmectomy (Fig. 5). Surgery was completed by a retrograde cholecystectomy and closing up was carried out with a right sub-diaphragmatic drain.

Surgical outcome was uneventful and after a short survey in the ICU, the patient was discharged on the VII post-operative day.

Pathology showed that the aneurysmal wall was substituted

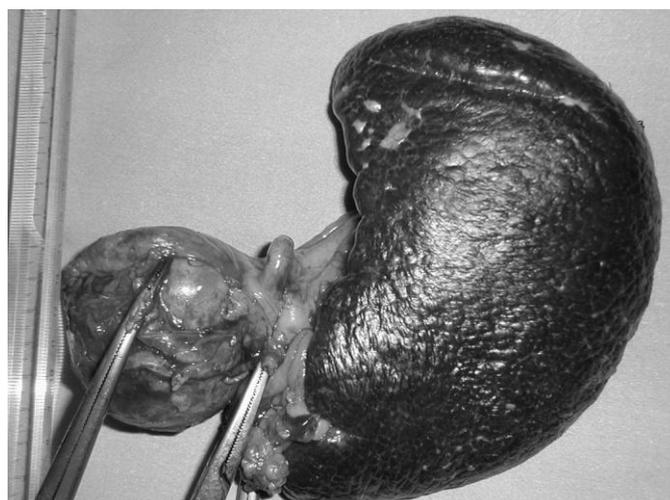


Fig. 5.

by a fibrous non-specific tissue, with few focal calcifications but without typical atherosclerotic lesions. The mild splenomegaly was consistent with a chronic congestive disease.

Discussion – Conclusion

The reported case presents many unusual aspects which mainly regard the size, the aetiology of the aneurysm and the patient's age.

In the unselected population, SAAs are uncommon as they are found in less than 0.2% of subjects. Their mean size is 2.1 cm. but aneurysms over 3 cm must be considered rare³³.

Even though there is not an exact definition for “giant

TABLE II – “Giant” Splenic artery aneurysms: Review of the Literature

Size (cm)	Author (Reference)	Year	Cases	Sex	Age	Treatment/s
15	Palmer ³⁴	1950	1	M	64	aneurysmectomy
15	Becker ³⁵	1973	2	F	60	aneurysmectomy + splenectomy
18				M	74	fatal rupture
14	Glover ³⁶	1982	1	F	27	arterial ligation
30	Trastek ³³	1982	1	*	*	*
30	Tam ³⁷	1988	1	M	64	aneurysmectomy + splenectomy
“giant”	Kamada ⁶	1989	1	M	49	embolization
> 8	Long ³²	1993	2	M	78	ligature
> 5	Louvegny ³⁸	1995	2	*	*	diagnostic description
12	Kehagias ³⁹	1998	1	F	37	aneurysmectomy + splenectomy
11	Bornet ⁴⁰	1998	1	M	68	proximal ligation + endoaneurysmorrhaphy
7	Kaszynski ⁴¹	1999	1	M	54	aneurysmectomy + splenectomy
7	De Santis ⁴²	2000	1	F	59	embolization
8	Pagliariccio ⁴³	2003	1	M	55	aneurysmectomy + splenectomy
“giant”	Jeyamani ⁴⁴	2003	1	M	40	embolization
“giant”						
4	Lupattelli ⁴⁵	2003	1	M	56	embolization

* data available from Medline Abstracts only.

aneurysms”, we think that those larger than 5 cm. must be considered a separate entity, due to their exceptional occurrence and the related therapeutic problems.

In a review of the Literature from 1950 to date, only 18 aneurysms defined as “giant” were found in 15 reported papers ^{6, 32-45} (Table II) and the majority of them were treated surgically.

Minimally invasive procedures (such as percutaneous transcatheter embolization) were preferred, mainly depending on high surgical risk, technical difficulties and/or severe associated diseases.

In our patient, in spite of the elderly age, an open surgical option was preferred, due to the acceptable risk and the aim of obtaining a complete ablation.

Intra-operative difficulties were mainly linked to the perianeurysmatic adhesions but a meticulous dissection of the proximal artery and a medial reflection of the splenopancreatic bloc made the resection easier and bloodless.

As far as the etiology of our reported case was concerned, the evidence of parietal calcifications and the elderly age were initially in favour of an arteriosclerotic pathogenesis.

Nevertheless, the absence of specific pathology findings and the surprisingly good morphology of the remaining arterial tree suggested that calcifications could be secondary rather than primary lesions, as already noted by others ².

The case we reported had an extremely favourable outcome, which demonstrated that too often the age factor by itself is wrongly considered discriminatory for a surgical option.

Riassunto

Gli aneurismi dell'arteria splenica (SAAs) sono di solito singoli e di piccole dimensioni non raggiungendo i 3 cm. Una revisione della letteratura apparsa dal 1950 al 2004, nei 15 articoli riportati, solo 18 aneurismi sono stati definiti come “giant”.

Gli AA riportano il caso di un uomo di 87 anni trattato successivamente per un esteso aneurisma della vena splenica. Ad eccezione del dato relativo all'età del soggetto non è stata riscontrata alcuna relazione con altri aneurismi a questo correlati. Il paziente fu successivamente sottoposto ad un aneurismectomia en-bloc ed ad una splenectomia a cielo aperto.

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