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Mycotic Splenic Artery Aneurysm Secondary to Bacterial Endocarditis: Case Report and Review of the Literature

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ABSTRACT

Mycotic aneurysms are a uncommon presentation may be with rupture or sepsis. Disease management is often required to prevent catastrophic complications. Bacterial endocarditis is one of the classic causes of infected aneurysm. We report a case of a 148 mm mycotics plenics artery aneurysm secondary to endocarditis. Our patient have aortic and mitral valve replacements for acute articular Rheumatism, the disease management for our patient is a active surveillance of the aneurysm without complications. Our methodology is to review English and French articles from PubMed and cochran.

Introduction

Mycotic aneurysms are a uncommon presentation may be with rupture or sepsis. Disease management is often required to prevent catastrophic complications .Bacterial endocarditis is one of the classic causes of infected aneurysm. We report a case of a 14 8 mm mycotics plenics artery aneurysm secondary to endocarditis. Our patient have aortic and mitral valve replacements for acute articular Rheumatism, the disease management for our patient is a active surveillance of the aneurysm without complications. Our methodology is to review english and frensh articles from PubMed and cochran**.**

Observation

Our patient N, T aged 56-year-old, she have hitory of rheumatic Valvulopathy withmecanic remplacement ; she presented in the Emmergency for prolonged fever ,cough and loss of weight witout anothers symptoms, and without abdominal pain. He denied any history of drug abuse, she have a 60 -pound weight.

Laboratory studies demonstrated a white blood cell count of 17,000 /L and a hemoglobin level of 11, 8 grams. Nothing in here history suggested that she was immuno-compromised. On physical examination, temperature was at 38, 5 C .His blood pressure was 110/60 mm Hg, with a pulse of 70. On cardiac examination, we noted Mitral Valve Click the heart gularsound was irri.she had normal dentition. The neurologic examination was normal.

Blood cultures obtained on admission were negative. A transesophageal echocardiography, were identified suspect image on the mitral prothesis. A CT scan of the abdomen identified splenic artery aneurysm without any complications (Fig1).We have complet with angiography demonstrated splenic arteryaneurysm14 /8 mm.

We have discuss in the multi disciplanary team with surgeon we decided In front of the strong suspicion of infectious endocarditis with patient carrying double valvular prosthesis mechanical and suspicious image to ETO to make PET SCAN (Fig 2) that show Hyperintense pathological metabolism of part of the mitral valve prosthesis having increased metabolism during the recovery of the patient at 1:45 after injection for Acquisition in favor of infectious endocarditis , so we have included the patient ’s with active surveillance.

The patient s was treated with intravenous ceftriaxone (Gentamicine ,amoxiciline) antibiotics for 6 weeks , 12-month follow-up with CT scan showing no modifications and stabilisation , she doing well after one year follow up . There has been no evidence of recurrent infection. She is being anticoagulated with acenocoumarol .

Discussion

Mycotic (or infective) aneurysms are localized, irreversible vascular dilatations caused by weakening and destruction of the vessel wall by an invasive organism establishing an infective arteritis. They are now rare in clinical practice (due to effective and prompt antibiotic therapy) constituting only 1–3% of all arterial aneurysms,[1] but potentially life threatening.

In 1885, Sir William Osler described the association between the development of infected aneurysms and what he referred to as “malignant endocarditis.”2 Osler coined the term mycotic aneurysm to describe these aneurysms. Infected aneurysm is the preferred term now because bacteria are the microorganisms predominantly involved (2, 3).

In the pre-antibiotic era, the most common pre-disposing factor was bacterial Endocarditis (4) This is now only present in the minority, with the exception of intracranial lesions that are almost exclusively associated with intracardiac sources (5) The principal current risk factor is atherosclerosis (and its determinants male sex, increasing age and cigarette smoking): damage to the intimal lining increases susceptibility to microbial colonization and secondary degeneration.Vascular anomalies including pre-existing aneurysms, aortic coarctation or patent ductus arteriosus also elevate risk and easily rupture.

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Immune competence is another important determinant with increased frequency of mycotic aneurysms observed with malignancy, diabetes mellitus, alcohol misuse, use of immunosuppressive medication and HIV infection. Unusual pathogens, such as fungi, cause disease in those with profound immunocompromise. Intravenous drug users comprise a distinct and important subgroup.

In addition to causing infected aneurysms, bacterial endocarditis is more virulent because of the potential for systemic sepsis and because bacterial endocarditis often results in multiple emboli or multiple aneurysms, or both. For these reasons, Dean et al1 recommended that aneurysms associated with bacterial endocarditis be termed embolomycotic aneurysms. A total of 25 emboli or aneurysms involving the cerebral, intra-abdominal, or lower extremities were found in their series of nine patients with bacterial endocarditis, prompting these authors to recommend empiric angiography to identify silent but potentially lethal infected foci. CT scanning of the head or abdomen or magnetic resonance angiography would also be appropriate imaging modalities and may be superior to angiography (1).

In all patients in whom the diagnosis of mycotic aneurysm is considered, transthoracic followed by transoesophageal echocardiogram should be performed to exclude endocarditis. These modalities may also reveal aneurysms of the thoracic aorta. If negative, this should prompt the search for another source of endovascular infection (5).

Magnetic resonance angiography (MRA) is an alternative modality but currently restricted by longer examination times, increased susceptibility to motion artefact and small volume coverage (6,7).

Peripheral arteries are best imaged initially by ultrasound. Aneurysms appear as circumscribed, hypoechoic lesions adjacent to the main arterial lumen with turbulent flow on Doppler. Differentiation of infective from sterile lesions requires correlation with the clinical presentation, but suspicious features include a lobulated vascular mass; an indistinct irregular arterial wall; and peri-aneursymal oedema or soft tissue mass. Conventional angiography remains the gold standard, but suffers the same limitations as direct aortography (8).

The treatment of infected splenic artery aneurysms is primarily surgical, with excision of the aneurysm. Concomitant splenectomy may be required if associated splenic infarcts or abscesses are present or if the aneurysm is located in the splenic hilum (9).

Transcatheter embolization has been used in the treatment of noninfected visceral aneurysms.(10,11) However, in one of the 10 patients with noninfected splenic aneurysms, all treated by endovascular means, Gabelmann et al described the development of a splenic infract with abscess formation necessitating a splenectomy. In the report by Saltzberg et al,14 major complications developed in four (36.4%) of 11 patients with distal splenic artery aneurysms treated with endovascular embolization, comprising one patient with a late recurrence requiring surgical repair, two patients with large symptomatic splenic infarcts, and one patient with severe pancreatitis.(12)

Septic embolization to the spleen may produce splenic infarction and abscess formation and may result in splenic rupture. In the series by Ting et al4 of 108 patients with endocarditis, abdominal CT scans were performed in 29 asymptomatic patients, (38%) of whom had splenic infarcts.

4 Splenic abscesses were also present in 20 patients in that series, with rupture occurring in one. Patients with small splenic infarcts may be treated conservatively. Patients with abscesses are best treated with splenectomy. In Green's15 series of six patients with splenic abscesses, percutaneous drainage was attempted in four patients but was successful in only one, leading the author to recommend splenectomy in this situation. (13)

Endovascular treatment of presumed infected thoracic and abdominal aneurysms has been reported. Berchtoldt et al (14) described successful endovascular treatment of an abdominal aortic aneurysm after Salmonella septicemia. One patient required endograft fenestrations for the superior mesenteric and renal vessels; however, the patient died postoperatively after graft migration and occlusion of the visceral vessels. The remaining thee patients survived. In our patient, we elected to replace the infected valves and resect the splenic artery aneurysm and spleen during the same operative procedure because of the large size of the aneurysm and the abscesses within the spleen. Concomitant valve replacement and splenic artery aneurysm resection was also reported by Corbi et al In their patient, however, the aneurysm had ruptured (15).

Figures

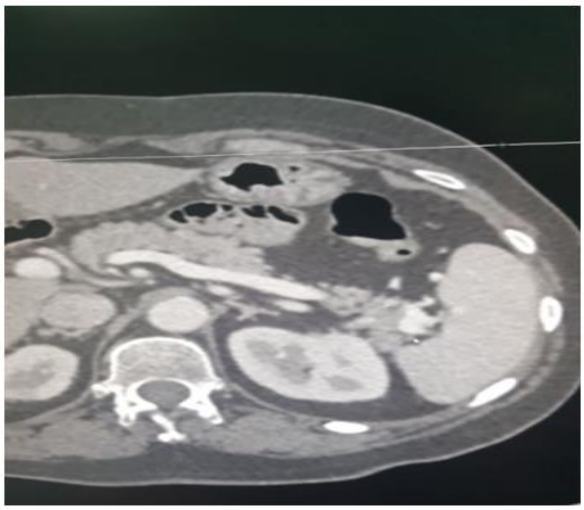

Fig 1.CT scan splenic artery aneurysm.

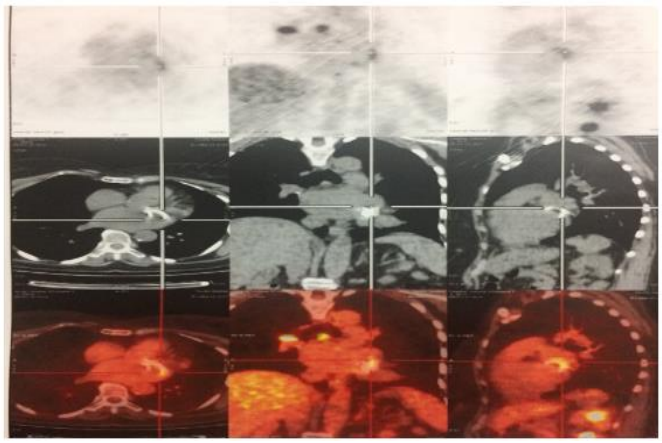

Fig 2. PET scan Hyperintense pathological metabolism in the the mitral valve prosthesis in favor of infectious endocarditis .

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