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CASE REPORT

INFLAMMATORY ABDOMINAL AORTIC ANEURYSM – ENDOVASCULAR TREATMENT: CASE REPORT

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ABSTRACT

INTRODUCTION: Inflammatory Abdominal Aortic Aneurysms are characterized by a dense perianeurysmal inflammatory reaction, characterized by the presence of a thickened arterial wall and increased laboratory tests of inflammatory activity. CASE REPORT: A 55-year-old female patient with a CT scan of the abdomen showing the presence of an infrarenal Abdominal Aortic Aneurysm measuring 14.1 x 8.1 x 9.1 cm. She underwent endovascular repair after remission of the inflammatory activity with the use of corticosteroids and methotrexate. After 6 months of treatment, the presence of type II Endoleak was observed. DISCUSSION: Inflammatory aneurysms should be suspected in patients with aortic aneurysms with an atypical epidemiological history. The incidence of rupture tends to be similar to that of non-inflammatory aneurysms. Open surgical resection is difficult due to the extensive fibrous and inflammatory reaction and adhesion to adjacent structures. The application of endovascular surgery for this type of aneurysm is considered promising. Type II endoleak is the most frequent and is characterized by a retrograde reflux through the aortic branches. For cases in which there is no expansion, the recommendation is to carry out follow-up with serial imaging tests.

KEYWORDS: INFLAMMATORY ABDOMINAL AORTIC ANEURYSM; ENDOVASCULAR SURGERY; TYPE II ENDOLEAK

INTRODUCTION

Inflammatory Abdominal Aortic Aneurysms correspond to approximately 3 to 10% of abdominal aortic aneurysms. They are characterized by a dense perianeurysmal inflammatory and fibrotic reaction that encompasses neighboring structures, rarely reaching the aorta above the emergence of the renal arteries.[1]

The diagnosis is suspected because of abdominal or back pain, weight loss, increased erythrocyte sedimentation rate (ESR), and symptoms of involvement and ureteral stricture with hydronephrosis. [3, 4]

The tomographic findings that suggest its diagnosis are the presence of contrasted aortic lumen, with non-opacified mural thrombus and thickened arterial wall, tending to involve mainly the anterior and lateral walls, preserving the posterior.[1, 4, 5]

The first open surgical repair to correct an abdominal aortic aneurysm was performed in 1051 by Charles Dubost, with a homologous graft.[4] Since then, such techniques have been improved, and the advent of endovascular surgery has brought surgical correction as a less invasive option.

CASE REPORT

Patient MMBX, 55 years old, female, referred for outpatient care in November 2020, with a report of recurrent abdominal pain and distension, which started about a year before. The condition was associated with the sensation of a pulsating abdominal mass in the periumbilical region. Patient denies smoking history, denies previous personal history of vascular disease or family history. She denied other associated comorbidities.

During the investigation of abdominal pain, an abdominal CT scan identified the presence of an infrarenal Abdominal Aortic Aneurysm measuring 14.1 x 8.1 x 9.1 cm, approximately 2.8 cm below the renal arteries, with wall thickening, extending to the proximal portion of the iliac arteries bilaterally. Carotid Doppler showed hyperplasia of the bilateral intimal-medial complex of common carotid arteries.

In laboratory tests, he had an ESR of 122 and a CRP of 1.1. Follow-up with the Rheumatology team began, which started treatment for large vessel vasculitis, with corticosteroid therapy followed by methotrexate for a period of 60 days. After reducing the inflammatory activity, preoperative laboratory control tests showed an ESR of 8 and CRP of 0.5. Surgical treatment was then indicated to correct the Abdominal Aortic Aneurysm.

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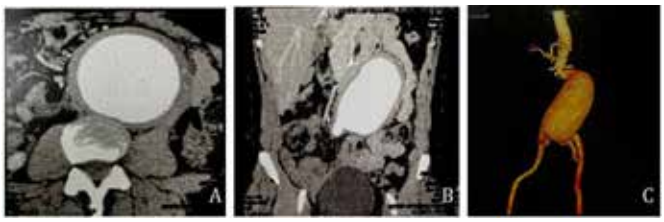

Figure 1: Computed Tomography Angiography of the abdomen – A: axial section showing an Abdominal Aortic Aneurysm measuring 9.1 cm in its largest diameter, with thickened walls; B: coronal section showing an Abdominal Aortic Aneurysm with an extension of 14.1 cm; C: 3D Reconstruction of Infrarenal Abdominal Aortic Aneurysm.

Endovascular surgical correction was opted, with a customized endoprosthesis. The procedure was performed in February 2021 without complications.

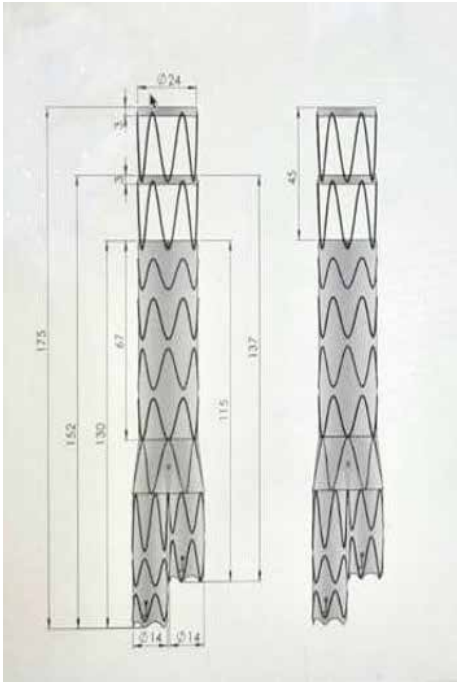

Figure 2: Customization project for a "double free-flow" stent in proximal modules.

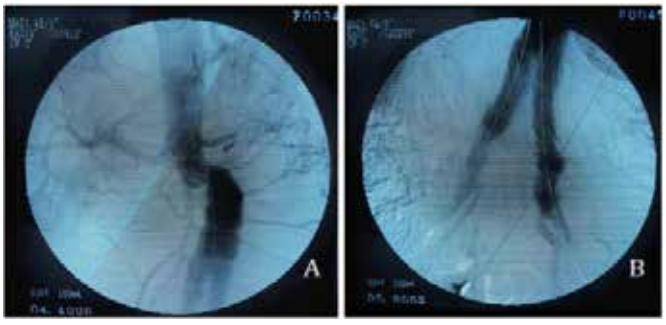

Figure 3: Intraoperative arteriography. A: proximal neck; B: iliac branches of the prosthesis.

The patient had a good postoperative evolution, being discharged on the 12th postoperative day in good clinical condition, for outpatient follow-up.

Figure 4: 3D reconstruction of abdominal CT angiography, showing satisfactory early postoperative control of endovascular repair of Inflammatory Abdominal Aortic Aneurysm.

After 6 months of treatment, a new contrast-enhanced tomography of the abdomen was performed, which confirmed the presence of type II endoleak, with a normopositioned prosthesis, without evidence of aneurysm expansion. Follow-up with serial angiotomography every 6 months was opted.

Figure 5: Axial section Angiotomography of the abdomen, showing type II Endoleak.

DISCUSSION

Inflammatory aneurysms should be suspected in patients diagnosed with Abdominal Aortic Aneurysm,

in which the clinical history is not compatible with the main known risk factors, such as male gender (about 4 to 6 times more frequent, in relation to women), advanced age, smoking, positive family history for first-degree relatives, obesity and Caucasian race.[2, 5, 6] Reinforced by the findings of imaging tests, which may show the presence of non-opacified mural thrombus and thickened arterial wall. [1, 4]

The incidence of rupture tends to be similar to that of non-inflammatory aneurysms, occurring most commonly in the posterior wall of the aneurysm, which is not thickened. Thus, the surgical indication is the same for non-inflammatory patients.[3, 10]

In inflammatory aneurysm, open surgical resection is difficult due to extensive fibrous and inflammatory reaction and adhesion to adjacent structures such as ureters and duodenum. This makes dissection of the proximal and iliac aorta difficult, and favors the occurrence of lesions in other structures that are also encompassed and difficult to identify.[7, 8] For this reason, the application of endovascular surgery for this type of aneurysm is considered promising.9

Endoleaks are persistent blood leaks into an aneurysmal sac after endovascular repair of the aneurysm. Type II Endoleak is the most frequent and is characterized by being a retrograde reflux through the aortic branches.9, 6 Interventional treatment for this leak is recommended if there is aneurysmal expansion or with the onset of symptoms attributable to the leak. For cases in which there is no expansion, the recommendation is to carry out follow-up with serial imaging tests, since 30% to 50% will be resolved without any intervention.[9]

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