Inflammatory aortic aneurysm.
Published on 11.08.2009

DOI: 10.1594/EURORAD/CASE.7547
ISSN: 1563-4086
Section: Cardiovascular
Case Type: Clinical Cases
Patient: 72 years, male

Clinical History:
A 72 year old smoker patient presented with ultrasound finding of abdominal aortic aneurysm.

Imaging Findings:
A 72 year old smoker patient with ultrasound finding of abdominal aortic aneurysm was referred to our institute to perform an abdominal spiral CT angiography.

CT images showed an abdominal aneurysm of the infrarenal aorta, which wall presented as diffusely calcified. Moreover, the aneurysm wall resulted to be surrounded by a thick (about 10mm) rind that showed progressive enhancement through the subsequent post-contrastographic phases, revealing a maximum enhancement during the late scans (Fig 1).

MRI was also performed before and after contrast media administration. It confirmed the presence of an enhancing rind of inflammatory soft tissue surrounding the aortic aneurysm (Fig 2).

These findings were suggestive of inflammatory aortic aneurysm.

Discussion:
Inflammatory aneurysm of the abdominal aorta (IAAA) is a variant of atherosclerotic aneurysm characterized by inflammatory and/or fibrotic changes in the periaortic regions of the retroperitoneum. These changes are probably the result of a local reaction to certain components of the atherosclerotic plaques and may have important implications, as the periaortic fibrotic tissue adherent to ureters, duodenum, and inferior vena cava.

In the initial evaluation of an abdominal aortic aneurysm, recognition of the typical ultrasound (US) appearance of an inflammatory aneurysm should suggest the need for a CT examination to determine the full extent of the inflammatory process.

US findings include an intensely echogenic aortic wall surrounded by a mantle of decreased echogenicity, representing the inflammatory process.

On CT scans, simple atherosclerotic aneurysms have a smooth wall with peripheral calcification and may contain varying amounts of thrombus. By contrast, inflammatory aneurysms have a soft-tissue density surrounding the often calcified aortic wall with relative sparing of the posterior aspect of the aorta. The infusion of medium contrast agent results in immediate luminal enhancement, while the inflammatory component enhances slowly and progressively, revealing a maximum enhancement during the late scans.

MR imaging is also important in the evaluation of the delineation of the periaortic inflammatory process, the adventitial fibrosis, and the aortic lumen.

Most surgeons agree that the definitive treatment for an inflammatory aneurysm is surgical dissection and graft inclusion. However, preoperative steroid treatment can be useful to diminish the inflammatory response and thus simplify the surgical repair. Inflammatory mass itself, however, may reinforce the aortic wall and contain the aortic flow; with the resolution of the inflammatory process, this wall is removed and the aneurysm becomes more prone to rupture.

US and spiral CT angiography (SCTA) are involved in the primary evaluation and in the follow-up of inflammatory
Aneurysms monitoring especially the growth of the aneurysm, the degree of involvement of the adjacent viscera and the eventually changes of the inflammatory response.

**Differential Diagnosis List:** Inflammatory aortic aneurysm.

**Final Diagnosis:** Inflammatory aortic aneurysm.

**References:**


Description: Volume Rendering of the abdominal aorta. Origin:
Description: The aneurysm anterior wall is surrounded by a soft tissue that showed progressive enhancement through the subsequent post-contrastographic phases. Origin:
**Description:** The inflammatory soft tissue reveals a maximum enhancement during the late scan (65 HU). **Origin:**
Figure 2

Description: The enhancing rind of inflammatory tissue after gadolinium administration. Origin: