ACUTE OCCLUSION OF DESCENDING THORACIC AORTA

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Disclosure

Speaker name: STELLA NAZZARENO

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
Acute aortic occlusion is a rare but potentially devastating clinical event which requires a prompt diagnosis and emergency treatment.

Only 5 cases of native thoracic aorta acute occlusion have so far been reported with different pathologic causes.

Sometimes the diagnosis could be misinterpreted as a stroke or other diseases of the central nervous system, leading to a delay in the diagnosis and revascularization procedure, followed by a morbidity and mortality increase.

Open surgery has been considered the first-line approach.
W, 64 yo

CLINICAL EXAMINATION

- Plegic marbled lower limbs
- Hypotension
- Absence of femoral pulses

LAB TEST

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemoglobin</td>
<td></td>
</tr>
<tr>
<td>Mean corpuscular hemoglobin</td>
<td></td>
</tr>
<tr>
<td>MCHC</td>
<td></td>
</tr>
<tr>
<td>Platelets</td>
<td></td>
</tr>
<tr>
<td>Glycemia</td>
<td></td>
</tr>
</tbody>
</table>
At the end of the CT scan, the patient showed **severe hypotension** and **tachycardia**.

- An occlusion balloon was inflated, via the left femoral artery, at the origin of common iliac artery to prevent possible peripheral embolism.

- Bilateral surgical access to common femoral arteries

- Echocardiogram showed signs of **acute right heart failure**

- Via the right femoral artery, arterial embolectomy by means of 5 and 6 F Fogarty Catheter (Edwards Lifesciences® , Irvine, CA)

No restoration of a good inflow indicated a need for immediate surgery was given!
✓ Standard guidewire 0.035” (Terumo medical corporation®, Somerset, NJ) was passed through the occlusion

✓ Aortic angioplasty was performed by an XXL balloon (Boston scientific®, Marlborough, MA) with a good result

✓ Residual floating thrombus was discovered by transesophageal echo at the level of the aortic lesion

✓ BeGraft 20x48mm (Bentley Innomed GmbH®, Hechingen, Germany) was deployed via right femoral access
Postoperative course hepatic enzymes, bilirubin, LDH and serum creatinine

Ischemic reperfusion syndrome

Paraplegia was permanent and the neurological status showed a sensitive level at D12 L1

MR encephalic and spinal cord imaging, showing an acute ischemic lesion at D4-D12
On the 15th postoperative day, the CT scan angiography demonstrated the good positioning of the aortic endograft and a good patency of visceral vessels.
On the 25th postoperative day, the patient was discharged and referred to a rehabilitative unit in good general conditions and normal laboratory tests.

<table>
<thead>
<tr>
<th>Hemoglobin</th>
<th>9.9 g/dL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean corpuscular volume</td>
<td>94 fl</td>
</tr>
<tr>
<td>MCHC</td>
<td>31 g/dL</td>
</tr>
<tr>
<td>Platelets</td>
<td>$461 \times 10^3/\mu$L</td>
</tr>
<tr>
<td>Glycemia</td>
<td>103 mg/dL</td>
</tr>
<tr>
<td>AST/ALT</td>
<td>44/65 U/L</td>
</tr>
<tr>
<td>Pancreatic amylase</td>
<td>99 U/L</td>
</tr>
<tr>
<td>Lipase</td>
<td>129 U/L</td>
</tr>
<tr>
<td>Creatinine</td>
<td>0.5 mg/dL</td>
</tr>
<tr>
<td>D-Dimer</td>
<td>566 ng/mL</td>
</tr>
</tbody>
</table>

AST, aspartate aminotransferase; ALT, alanine aminotransferase; MCHC, mean cell hemoglobin concentration.
Review of the literature showed only five cases of acute occlusion of native descending thoracic aorta.

Two of these died few hours after the diagnosis.

The other 3 cases were operated with OPEN SURGICAL TECHNIQUE.

In one case, an axillobifemoral bypass was performed.

In two cases the entire calcified aortic segment was resected and replaced by a Dacron tube.
Acute aortic occlusion is a rare but potentially devastating clinical event, that requires a prompt diagnosis and emergency treatment.

In the present case, the patient, who had recently been submitted to major cardiac surgery, likely suffered from a thrombosis on a preexisting “coral-reef” of thoracic aorta and the triggering factor was a low cardiac output syndrome.

**Open surgery** has been considered the first line approach.

The present case is the first one reported with acute occlusion of descending thoracic aorta treated by endovascular approach.

Endovascular technique should be considered a rescue procedure when open surgery is not effective.
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