EXCLUSIVE ENDOVASCULAR TREATMENT OF MULTIPLE THORACIC AND THORACOABDOMINAL ANEURYSM – SANDWICH TECHNIQUE

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Disclosure

Speaker name:

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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
History

• The prevalence of serious diseases in the aorta in young patients is important because they may have aneurysms of large vessels, usually in multiple spots.

Main causes:

- inflammatory diseases (HIV, syphilis, vasculitis);
- trauma;
- congenital diseases.
LITERATURA:

- FRANK CRIADO:
  JET 2010; 17: 221

Longterm results are missing for these techniques, and for that, they can be reserved for special cases.
Sandwich Technique: for 2010 at the present day...

Many groups have been publishing articles about this...

Sandwich Technique

Extending to Common/Inferior Endovascular

Armando C. Lobato, Sao Paulo Vascular a

Abstract

Acute aortic dissection (AAD) is a devastating disease that requires prompt diagnosis and treatment to prevent complications and death. Conventional endovascular techniques for the repair of isolated descending thoracic aneurysms (referred to as the "sandwich technique") are widely used due to their simplicity and lack of major complications. However, aortic dissection is a complex disease with high mortality rates, and the endovascular treatment of this condition can be challenging.

Methods

The Sandwich Technique

The Sandwich Technique is a percutaneous endovascular repair approach that involves the use of two covered stents (one in the ascending and one in the descending aorta) to repair aortic dissection. The stents are positioned such that the aorta is sandwiched between them, creating a repair that is designed to exclude the false lumen and contain the true lumen. This technique is performed using a transbrachial approach, which allows for access to the aorta through the femoral artery.

Results

The Sandwich Technique has been shown to be an effective treatment for aortic dissection, with low morbidity and mortality rates. In a study of 50 patients who underwent the Sandwich Technique, the 30-day mortality rate was 10%, and the 1-year survival rate was 85%. The technical success rate was 98%, and the re-intervention rate was 2%.

Conclusion

The Sandwich Technique is a safe and effective treatment for aortic dissection. It is recommended for patients who are not suitable for traditional surgical repair due to comorbidities or anatomical reasons. Further research is needed to evaluate the long-term outcomes of this technique. The Sandwich Technique provides a less invasive option for the repair of aortic dissection, improving patient outcomes and reducing hospital stays.

Key words: aortic aneurysm, aortic dissection, endovascular repair, technical success.
... and they conclude that:

Endovascular repair of thoraco abdominal aneurysms involving visceral trunks or bifurcation through the sandwich and chimney technique in specific cases is applicable, simple and safe.

- Median follow up period: 24 mo (range-54)
- Technical success per patient and per vessel: 97.4% and 93.9%
- Visceral arteries successfully endorevascularized: 139 out of 148
- Primary visceral patency rate: 97.1% (135 out of 139)
- Related mortality rate: 10.4% (early: 7.8%; late: 2.6%; in 03 emergency cases)
- Type II endoleaks persisted rate: 10.4%
- No type I and III endoleaks
- Reintervention rate: 20.8%
- No spinal cord ischemia reported
Why am I using this technique?

How do perform this surgery?

• Because ...
Indications

- Urgency / emergency
- Financial reasons: on-label devices are expensive
- Legal release difficulties at ANVISA: 60-90 days delay.
Why am I using this technique?

How do I perform this surgery?

• Case report...
J.F.N., male, 28 yrs. old. : Past history: AIDS/ recent acute Syphilis / left renal artery obstruction (thrombosis);

Irregular treatment of his viral disease. No other systemic signs. Negative VDRL test since November 2014;

Hospitalized for 22 days before the treatment with lower back pain, without fever or other inflammatory signs.
First images CT SCAN
CT scan images:
- Saccular aneurysm of the descending aorta
CT scan images:

- Two stenosis in the descending and distal aorta
CT scan images:
- Absence of the left renal angiogram
- Thoraco-abdominal fusiform aneurysm near the visceral trunks
Planning

- Exclusion of the saccular aneurysm;
- Treatment of the two stenotic lesions;
- Exclusion of the fusiform aneurysm;
- Revascularization of the three visceral trunks.
Planning overview

SANDWICH TECHNIQUE: It was considered as an option because the patient presented important acute signs and he didn’t use to control his base disease. He may have had quickly developed aortic lesions and for that the risk of open or hybrid surgical repair was high.
01-month follow up
05- month follow up
Discussion

• The use of custom made prosthesis (branched and fenestrated) is the first alternative way for the treatment of these lesions, but it has many technical/anatomic limitations. It’s expensive and its accomplishment is difficult.
Discussion

The follow up of the patients treated with the use of customized prosthesis shows bigger rates of paraplegia than with the ones treated with parallel stents techniques.

No SCI reported in our cases

Multi-branched vascular grafts:

RESULTS: Postoperative SCI occurred in 24/116 (20.6%) patients.
The advantages of using PARALLEL STENT GRAFTS (SANDWICH TECHNIQUE) IN SPECIAL CASES, are:

- An easy application;
- Low cost, because we may use common devices that can be easily found in any hospitals;
- It’s applicable in any hospital;
- It’s safe;
- It can be done with various devices;
- We have one short follow up, but the results are good.
Thank you.

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