

Is There a Less Invasive Thoracoabdominal Aortic Aneurysm Repair? Off-pump thoracoabdominal surgery

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Off-pump thoracoabdominal surgery

History

Ebers Papyrus (2000 BC)- traumatic peripheral aneurysm

Galen (131-200) – localized pulsatile swelling

Antyllus (-200 AD) first ligated injured aneurysmal vessels

Reinforcement
C Moore, 1832



Endoaneurysmorrhaphy
R Matas, 1880

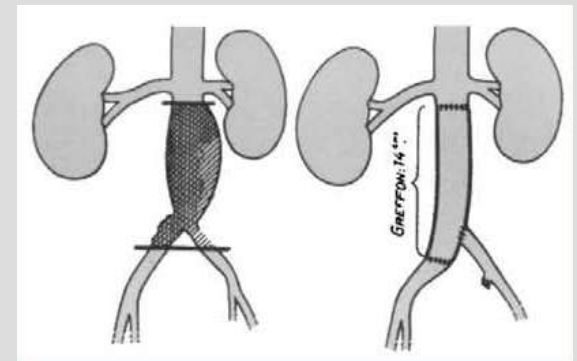


Vessel anastomosis
A Carrel, 1906



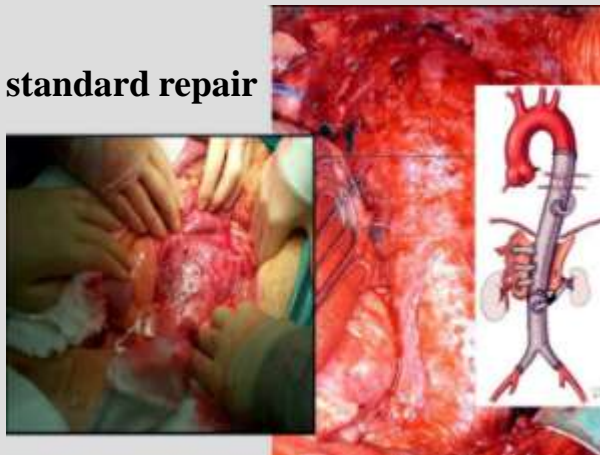
Other approaches

First aneurysm resection
1951 Charles Dubost Abdominal AAA
1951 Denton Cooley Ascending AA

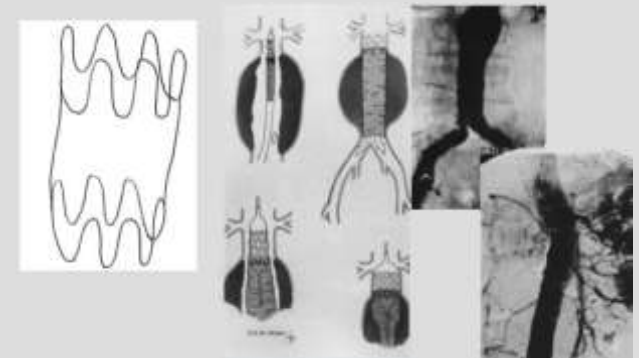


Replaced aorta with 15cm homograft

No standard repair



Endovascular Aortic Repair
Juan C. Parodi



Off-pump thoracoabdominal surgery

Indications for operation

Symptomatic

Acute enlargement

Rupture

Morbidity

- **Postoperatively**
 - **Bleeding 8-10%**
 - **Paraplegia (early,late) – 13-15%**
 - **Organ ischaemia-10-12%**
 - **Renal failure 5-7%**

Perioperative morbidity up to 50%

Mortality

Elective 5 to 20 %

Emergency 20 to 60 %



TAA is diagnosed in 5.9 to 10.4 per 100,000 people per year





Mortality and Morbidities of Open Surgical Repair

| | <u>Range %</u> |
|-----------------------------------|----------------|
| Operative Mortality | |
| Ascending Aorta | 3-5 |
| Aortic Arch | 6-19 |
| Thoracoabdominal | 10-15 |
| Neurological complications | |
| Stroke | 2-3 |
| Paraparesis/Paraplegia | 3-15 |
| Renal Failure | 5-10 |
| Cardiac Event | 5-30 |
| Respiratory Failure | 20-30 |

1. Kouchoukos NT et al. Surgery of the Thoracic Aorta. *N Engl J Med* 1997;336:1876-1888.2.
2. Svensson L, et al. Variables Predictive of outcome in 832 patients undergoing repairs of the descending thoracic aorta. *Chest* 1993;104: 1248-1253.
3. Crawford et al. Surgical treatment of aneurysm and/or dissection of the ascending aorta, transverse aortic arch, and ascending aorta: factors influencing survival in 717 patients. *J Thorac Cardiovasc Surg* 1989;98:659-674.
4. Clouse et al. Improved prognosis of thoracic aortic aneurysms. *JAMA* 1998;280:1926-1929
5. Svensson LG, et al. Experience with 1509 Patients undergoing thoracoabdominal aortic operations. *JVS* 1994; 17(2):357-68



Off-pump thoracoabdominal surgery

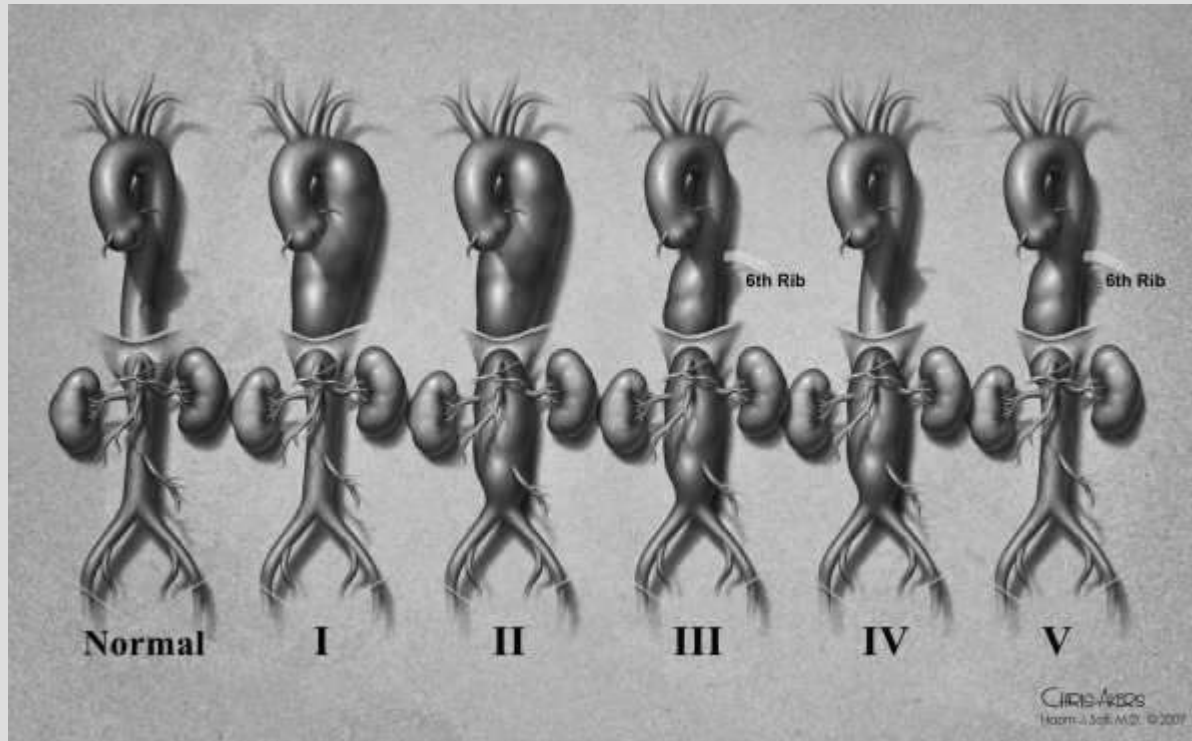
No standard surgical techniques and approaches

- **Distal perfusion**
 - Total CPB DHCA
 - Total CPB with moderate hypothermy and branch cannulation reperfusion
 - Partial CPB LA – Fem artery; normothermy
 - Arteri-shunt-aorto-femoral
 - Off pump thoracoabdominal surgery- no circulatory support
- **Spinal cord protection**



Off-pump thoracoabdominal surgery

Crawford - classification

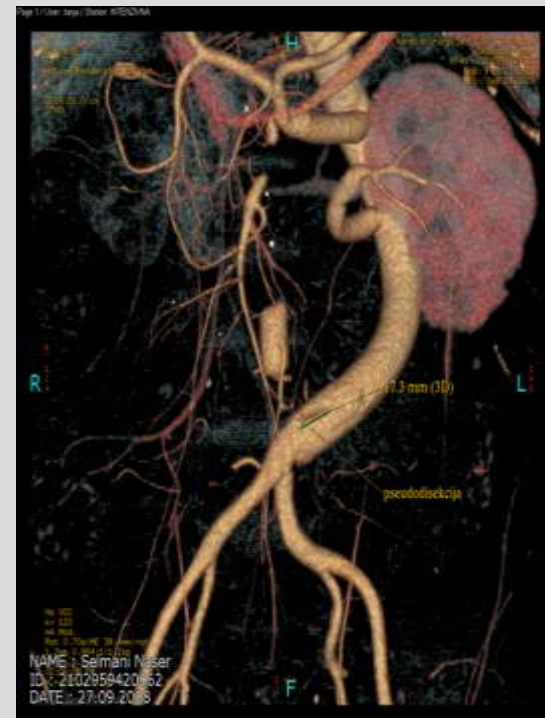


Off-pump surgery for thoracoabdominal aneurysm – our experience- urgent cases

64 MSKT pre-op. 22.09.2008god.

S.N. 49 god. haemorrhagic shock and rupture of the abdominal part of the thoracoabdominal aneurysm- preop. Hb -5,6

One month ago – laparotomy and exploration of the abdominal aorta ; with initial wound infection



64 MSKT post-operativno 27.09.2008

6months hospitalisation

Secondary wound healing; Normal quality of life



Off-pump surgery for thoracoabdominal aneurysm-urgent case

60 old man-

Severe abdominal pain, vomiting,
pulsation in the abdominal regija

13 h. respiratory machine

2nd day mobilisation

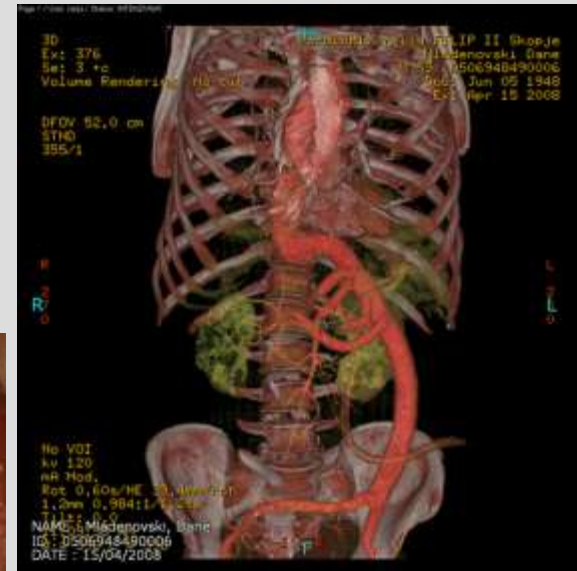
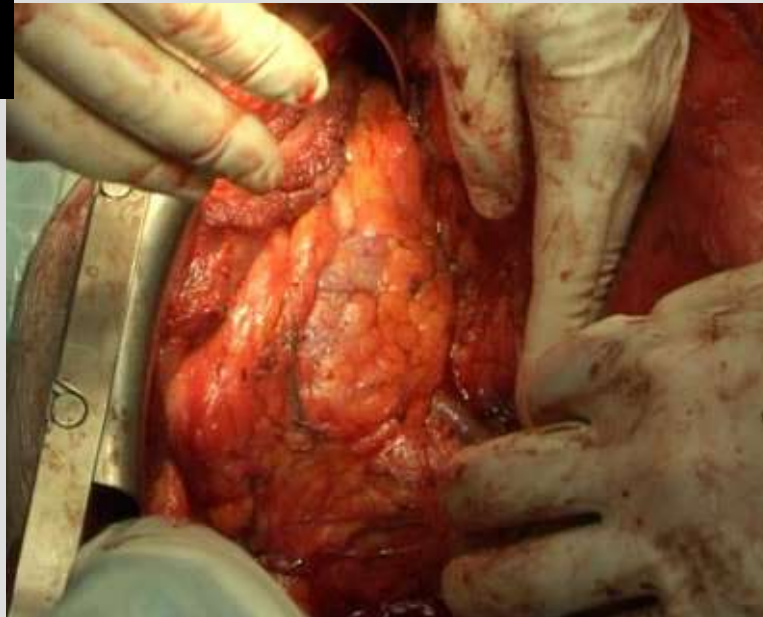
3rd day chest tube out

9th day discharged

No - complication



Pre-op 64 MSCT scan

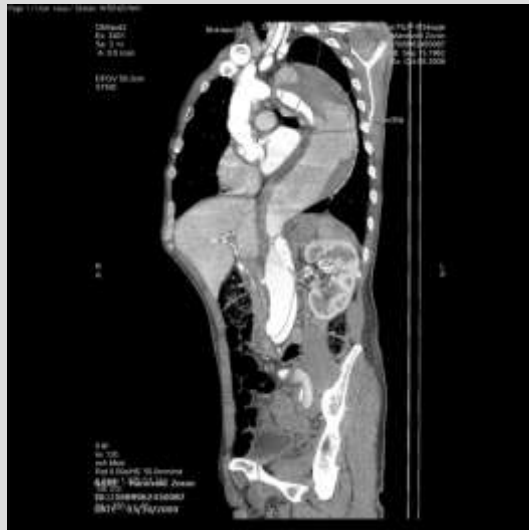


Post-op 64 MSCT scan



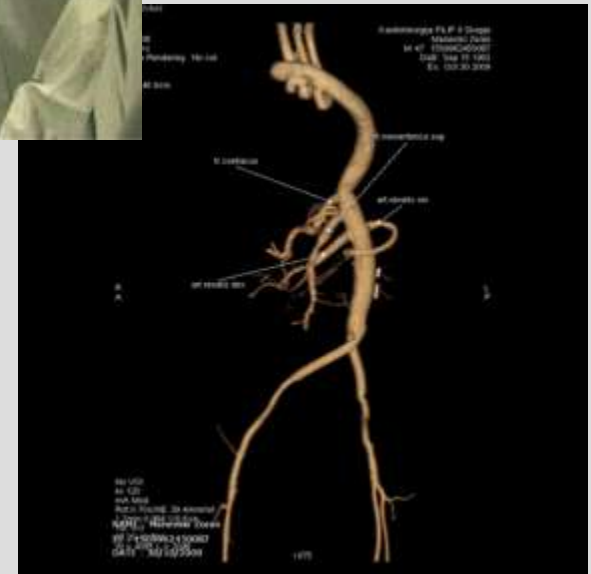
Off-pump surgery for thoracoabdominal aneurysm- urgent case

Preop. 64 MSCT



**M.Z. 47y, 2004 – Ist op.
replacement of the ascending
aorta (dissection)
2009- Dg- aneurysm of the
thoraco-abdominal part of the
aorta**

**Postoperatively-
Haemodynamically stabile
Late paraplegia
Deep depressive syndrom
Exitus lethalis after 6,5 months**



3D reconstruction

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Images in cardio-thoracic surgery DeBekay repair for type III thoracoabdominal aortic aneurysm

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Cardiosurgery - Skopje



Off-pump thoracoabdominal surgery

Comment

- **Urgent surgery for thoracoabdominal aneurysm is a big challenge for surgeon as well as for intensive care treatment and the patient**
- **Off pump thoracoabdominal surgery seems to be less invasive approach**





Cardiosurgery - Skopje

