Impact of Type-II Endoleak on Aneurysm Sac Growth and Predictors of Type-II Endoleak after Endovascular Aneurysm Repair

Ren Kawaguchi, Yusuke Miyashita, Hakuken Kan, Masahiko Ezure, Tatsuo Kaneko, Shigeru Oshima, Carolina Granda, Lola Villagraz, Leticia Blazquez, M. Teresa Velazquez, T-II on aneurysm sac growth and reveal preoperative T-II predictors. Repair (EVAR) is an unresolved phenomenon. We aimed to investigate the impact of T-II on aneurysm sac growth and reveal preoperative T-II predictors.

**Background:** Percutaneous treatment of aortic coarctation (AC) is usually guided by ultrasound (IVUS) guidance might be useful to choose adequate balloons and stents size and to optimize the final result after angioplasty, but there are few reports in the literature.

**Conclusions:** Patients (91%), in seven cases covered stents were used and bare metal stents in the rest. One patient was treated only with high pressure inflation of a non-compliant balloon inside a previously implanted stent. Mean diameter of the balloons where the stent was mounted was 15.6±2.9 mm (12-22), mean length of the stent was 35.5±5.3 mm (28-45), and mean diameter of postdilatation balloons was 17±4.2 mm (12-25). Intrastent postdilatation was performed in 73% of cases, mainly due to significant stent infraprosthetic detected with IVUS. All patients were discharged in 24-48 hours without significant complications. The use of IVUS changed the initial strategy, based only in angiography, in 73% of cases (balloon size, stent length or need for postdilatation).

**Conclusions:** IVUS guidance during percutaneous treatment of AC modifies in a high percentage of cases the treatment strategy based only in angiography. There are significant anatomic differences between angiographic and IVUS measures.

The multilayer flow modulator stent for the treatment of thoracic abdominal and abdominal aortic aneurysms.

Michel C. Henry, Amira Benjelloun, Isabelle Henry, 1Cabinet de cardiologie, nancy, France, 2Clinique Coeur et Vaissaux, RABAT, Morocco, 3Polyclinique Bois Bernard, BOIS BERNARD, France

**Background:** Thoraco Abdominal Aortic Aneurysms (TAAA) and Abdominal Aortic Aneurysms (AAA) are traditionally treated surgically, but more and more by interventional procedures (endografts, fenestrated, branched grafts, chimney techniques). Very few new concept of stent, the Multilayer Stent Flow Modulator (M.F.M) to treat these aneurysms (A) and try to avoid some major complications.

**Methods:** This self-expandable M.F.M is a 3 D braided tube made of several interconnected layers without any covering. We will explain and demonstrate the key problems of the stent leading to thrombosis, shrinkage of the A, eliminating the risk of rupture. Moreover, this M.F.M preserves the collateral branches allowing the possibility to cover any artery without compromising the flow (renal, digestive arteries, supra aortic vessels...).

**Results:** 10 TAAA, 8 AAA (7 extended to both iliac arteries) treated with M.F.M in very high risk patients. 53 M.F.M implanted (1 to 5 per pt), t: Technical success: 100% at 30 days: no neurological complication, branch patency 100%, no death During the follow up we had 3 deaths not device related. CT scan control performed at 1, 3, 6, 12, 18 months with calculation of A. Diameters and Volumes. t: All collateral branches remain patent and we observed a progressive thrombosis and shrinkage of the aneurysmal sac depending on the size of the collaterals. Some patients developed a thrombus after 1 month, some after 6 months and some even after 18 months. a: A significant mean diameter reduction was observed between baseline and 6 months: 17.2 mm reduction for the initial diameter, 13.8 mm for the anthero posterior diameter in the AAA group, t: Overtime the ratio thrombus volume / Total Volume is increasing and the ratio Residual Flow Volume / Total Volume is decreasing. The problems of thrombosis, shrinkage and volume reduction of the aneurysmal sac will be discussed. The complications (dissection of aneurysms walls) with M.F.M appear lower in comparison with current endovascular techniques, and with surgery.

**Conclusions:** The M.F.M represents an alternative to current devices to treat TAAA and AAA. It is a safe procedure with a low complication rate. The first results are promising. A larger study is ongoing.

Aortic Dissection and Mortality During Pregnancy in the United States: A 10-Year Analysis

Neal Savolainen, 1University of Illinois at Chicago, Chicago, United States

**Background:** Aortic dissection during pregnancy is a morbid condition for both the mother and her fetus. There is scant data on the incidence, risk factors, and outcomes of aortic dissection during pregnancy.

**Methods:** The Nationwide Inpatient Sample (NIS) Database was queried for cases of pregnancy and aortic dissection from 1998-2008. The primary analysis identified specific medical co-morbidities increasing the risk of aortic dissection during pregnancy.

**Results:** We identified 10,550,421 pregnant women and 41,088 aortic dissections in the NIS Database from 1998-2008. From these cases, we identified 44 cases of aortic dissection during pregnancy. The rate of aortic dissection in pregnancy was 0.004%, and represented only 0.1% of all cases of aortic dissection. Mean age of aortic dissection was younger (31-years-old vs. 69-years-old). The incidence of Marfan’s syndrome was higher (15.9% vs. 1.8%, p < 0.00001) and the incidence of hypertension was lower (18.2% vs. 68.3%, p < 0.00001). 14 out of the 44 pregnant patients with aortic dissection underwent endovascular treatment for the repair of the aorta. Only 10 (71.4%) of the 14 were treated with an endograft (9 women and 1 man). The procedure was successful in all cases. Mean gradient changed from 33.9 mmHg (baseline) to 4.8 mmHg (final). Minimal lumen diameter of the AC with angiography was 8.1±2.2 mm and with IVUS 9.4±1.9 mm (p < 0.005). Stents were implanted in 10 patients (91%), in seven cases covered stents were used and bare metal stents in the rest. One patient was treated only with high pressure inflation of a non-compliant balloon inside a previously implanted stent. Mean diameter of the balloons where the stent was mounted was 15.6±2.9 mm (12-22), mean length of the stent was 35.5±5.3 mm (28-45), and mean diameter of postdilatation balloons was 17±4.2 mm (12-25). Intrastent postdilatation was performed in 73% of cases, mainly due to significant stent infraprosthetic detected with IVUS. All patients were discharged in 24-48 hours without significant complications. The use of IVUS changed the initial strategy, based only in angiography, in 73% of cases (balloon size, stent length or need for postdilatation).

**Conclusions:** IVUS guidance during percutaneous treatment of AC modifies in a high percentage of cases the treatment strategy based only in angiography. There are significant anatomic differences between angiographic and IVUS measures.