TCT-776
The Multilayer Flow Modulator Stent For The Treatment Of Peripheral And Visceral Aneurysms
Michel C. Henry,1 Amira Benjelloun,2 Isabelle Henry3
1cardiologie, BOFFERDANGE, Luxembourg; 2Clinique Coeur et Vaisseaux, RABAT, Morocco; 3centre de cardiologie, ROUROY, France

BACKGROUND Arterial aneurysms (An) are traditionally treated surgically, but more and more by interventional procedures with a high technical success rate, but some problems are not solved like protection of aneurysm rupture, endoleaks, stent thrombosis, collateral branch thrombosis. We used a new concept of stent, the Multilayer Flow Modulator (MFM*) to treat An. and try to avoid some drawbacks encountered with endografts.

METHODS This MFM* is a 3 Dimensional braided tube made of several interconnected layers without any covering. Our earliest in vitro (theoretical simulation), computerized Fluid dynamics, Molecular Modelization and in vivo tests demonstrated that this MFM* reduces the velocity in the aneurismal sac up to 90% by modifying the hemodynamic conditions. A saccular aneurysm without collateral branch will thrombose quickly. If a collateral branch is present the flow is directed towards this branch leading to shrinkage of the aneurysm. Animal experiments show excellent results. Moreover, as demonstrated in animal and human studies this MFM* preserves the collateral branches allowing the possibility to cover any artery without compromising the flow (renal, digestive arteries, supra aortic vessels...)

RESULTS 44 peripheral An. (iliac:23, femoral:1, popliteal:5, renal:8, mesenteric:2, carotid:2, Subclavian:2, Caeliac trunk:1) were treated with the MFM* (male:31, mean age 62.8 ± 8 y) (57 stents ± 5 to 14 mm, length 40 to 120 mm) were implanted to treat these aneurysms, by femoral approach (43 cases), brachial approach (1 case), Technical success in all patients. No complications. All An. thrombosed with diameter reduction in some pts. The thrombosis could take several weeks depending on the importance of collateral branches. 6 month to 36 month follow up will be presented and we will discuss the time needed to achieve exclusion of the An. All the side branches remained patent.

CONCLUSIONS A new concept of stent, the MFM* (without any covering) is developed to treat An. It opens a new approach to treat peripheral An. avoiding most of the complications encountered with current endovascular techniques. The results obtained seem promising. A larger study is ongoing.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention
KEYWORDS Aneurysm, Multilayer Flow Modulator, Stent

TCT-777
The Multilayer Flow Modulator Stent For The Treatment Of Thoraco Abdominal And Abdominal Aortic Aneurysms. Moroccan Experience
Michel C. Henry,1 Amira Benjelloun,2 Isabelle Henry3
1cardiologie, BOFFERDANGE, Luxembourg; 2Clinique Coeur et Vaisseaux, RABAT, Morocco; 3centre de cardiologie, ROUROY, France

BACKGROUND Thoraco Abdominal Aneurysms (TAA) and Abdominal Aortic Aneurysms (AAA) are traditionally treated surgically, but more and more by interventional procedures (endografts, fenestrated, branched grafts, chimney techniques). We used a 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 selfexpandable M.F.M is a 3 D braided tube made of several interconnected layers without any covering. We will explain and demonstrate the key principles of the stent leading to thrombosis, shrinkage of the A, eliminating the risk of rupture. The M.F.M preserves the collateral branches allowing the possibility to cover any artery without compromising the flow (renal, digestive arteries, supra aortic vessels...).Moreover it increases the flow by 25% in Renal Arteries and 23% in Supra Aortic branches

RESULTS 10 TAAAs, 8 AAA (7 extended to both iliac arteries) treated with MFM in very high risk patients. 53 MFM implanted (1 to 5 per pt). a Technical success: 100% a At 30 days: no neurological complication, branch patent 100%, no death 0 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. 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: 15,99 mm reduction for the transversal diameter, 12,75 mm for the antero posterior diameter in the TAAA group. o 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. Long-term follow-up (5 years) will be presented. The complications rates 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.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention
KEYWORDS Aortic aneurysm, Multilayer Flow Modulator, Stent

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Renal Artery Aneurysms. First Human Treatment With The Multilayer Flow Modulator
Michel C. Henry,1 Antonios Polydorou,2 Isabelle Henry3
1cardiologie, BOFFERDANGE, Luxembourg; 2Panteleimon General Hospital, Athens, Greece; 3centre de cardiologie, ROUROY, France; 4Clinique Coeur et Vaisseaux, RABAT, Morocco

BACKGROUND Renal Artery Aneurysms (RAAs) can be surgically treated but due to high risk, endovascular procedures have been proposed (coils, graft...). All these techniques have some drawbacks, potential complications and contraindications. We propose a new technique: the Multilayer Flow Modulator (MFM*), a self expandable.

METHODS This MFM* is a 3D braided tube made of several interconnected layers without any covering. Our earliest in vitro (theoretical simulation computerized Fluid dynamics, Molecular Modelization) & in vivo. demonstrate that this MFM* reduces the velocity in the aneurismal sac up to 90% by modifying the hemodynamic conditions. A saccular aneurysm (A) without collateral branch will thrombose quickly. If a collateral branch is present the flow is directed towards this branch leading to shrinkage of the aneurysm. In fusiform A the flow is laminated, the vortexes eliminated, eliminating the risk of rupture. Animal experiments show excellent results. Moreover, as demonstrated in animal and human studies this MFM preserves the collateral branches and increases the flow in them, allowing the possibility to cover any artery without compromising the flow.

RESULTS 9 RAAs (right: 6, left: 3) in 9 pts (male: 4) mean age 58 y. treated with MFM* 7 pts had atheromatous disease, 2 a fibromuscular dysplasia. One pt had a solitary kidney. All these pts had hypertension. 11 MFM* (ø: 5 to 7 mm, length 30 to 60 mm) loaded in a 6 F sheath implanted by femoral approach through 8 F guiding catheter. These stents covered major renal branches without compromising the flow. Technical success: 100%. No complications. Immediately: important reduction of the velocities inside the aneurismal sac. 6 to 36 month follow up will be presented. All aneurysms thrombosed with diameter reduction in some pts. The thrombosis could take several weeks depending on the importance of collateral branches. All the side branches remain patent.

CONCLUSIONS The MFM* is a new technique which seems promising to treat RAAs. Collateral branches can be covered without compromising the flow and risk of renal infarction. It is a safe procedure with a very low complications rate. Larger study is ongoing.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention
KEYWORDS Angioplasty, Renal artery stenosis, Stent

TCT-779
Percutaneous Transluminal Angioplasty And Stenting Of Extracranial Vertebral Artery Stenoses
Isabelle Henry,1 Michel C. Henry,2 Amira Benjelloun3
1centre de cardiologie, ROUROY, France; 2cardiologie, BOFFERDANGE, Luxembourg; 3Clinique Coeur et Vaisseaux, RABAT, Morocco

BACKGROUND To evaluate the safety and efficiency of vertebral angioplasty and stenting (VAS) in symptomatic patients.