

## Page for the General Public

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(on behalf of the Editorial Office)

The following pages summarize and review this issue's articles for an audience without a background in medicine or research.

### State-of-the-Art Review

*David Tilson: "Autoimmunity in the Abdominal Aortic Aneurysm and the Association with Smoking"*

It is well known that smoking increases the risk of developing an abdominal aortic aneurysm, a dilatation of the body's main artery in the abdomen, which can be life-threatening.

In his article, *David Tilson* discusses the mechanisms through which smoking causes aneurysm development, which are not yet fully understood. The hypothesis he discusses is that the destruction of the vessel wall is at least partly caused by an autoimmune process, which means that the body's immune system destroys its own cells. The nitric oxide in tobacco smoke can make changes to a specific molecule in the vessel wall, making these molecules

more recognizable for the body's immune system, which causes inflammation and vessel wall destruction. Several scientific findings support this theory, but the author stresses that there might be other mechanisms by which smoking promotes aneurysm development as well.

### Original Research Article

*Hakan Sahin et al.: "Diagnostic Utility of Chest Radiography in predicting long-standing systemic arterial hypertension"*

Long standing high blood pressure is an important risk factor for the development of an aortic aneurysm, a dilatation of the body's main artery. Many people are unaware of their blood pressure problem. In this research project, *Hakan Sahin et al.* studied if the width of the aorta seen on an X-ray of the chest is associated with increased blood pressure in these patients. Their study confirmed a significant statistical relationship between aortic width above 4 cm measured

on X-ray and high blood pressure. They therefore suggest that if an increased aortic width is detected on X-ray, the patient should undergo further tests to see if he or she has high blood pressure.

### Case Reports

*Alessandro Robaldo et al.: "Persistent buttock claudication after EVAR: a Surgical Solution."*

The authors describe a case of a patient who underwent repair of a dilated vessel in his pelvis using a stent graft, a tubed prosthesis inserted into the dilated vessel. During this procedure, a branch vessel had to be occluded. Since this vessel is one of those providing blood flow to the the buttock, the patient developed disabling pains in his buttock. Therefore, an open surgery was performed in which the stent graft was taken out, the dilated vessel replaced with another graft and the occluded vessel re-connected to blood flow. The patient recovered well and had no further pains after the



procedure. The authors discuss different surgical options in this setting, explain the technique used and its advantages.

*Haidi Hu et al.: "Single-stage endovascular treatment of a penetrating aortic ulcer with a concomitant "isolated" iliac aneurysm"*

*Haidi Hu et al.* discuss a case of a patient who had a "penetrating ulcer", a localized destruction of the vessel wall of her aorta, the body's main vessel. Besides this ulcer, which was located in the aorta at the level of her chest, she also had a dilatation of an important vessel in her pelvis, the right iliac artery. The authors decided to treat both problems at the same time with stent grafts, tubed prostheses which are inserted into the vessel. The procedure went well and follow up imaging showed

that the ulcer was resolved and the dilatation of the other vessel fully excluded by the stent graft. The authors therefore suggest to treat synchronous aneurysms or ulcers of the aorta and the iliac artery with stent grafts in a single procedure. Continued surveillance after the procedure is important.

*Umberto Rossi et al.: "Iliac branch device used as endovascular treatment for an abdominal aorta aneurysm with small diameter neck"*

When an aortic aneurysm, a dilatation of the body's main vessel, is covered from the inside with a stent graft prosthesis, a sufficient "neck" of normally shaped vessel on both ends is necessary to anchor the device. *Umberto Rossi et al.* discuss a case of a patient whose aneurysm in the abdomen did have a "neck" with a

very small diameter of only 13mm, which makes the procedure very challenging. Since in this case, the neck of the aneurysm had a size more typical for an iliac artery in the pelvis, they decided to treat this aneurysm with a device which was originally intended for the treatment of the iliac arteries. The procedure went well with the aneurysm being excluded and all vessels remaining patent.

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