

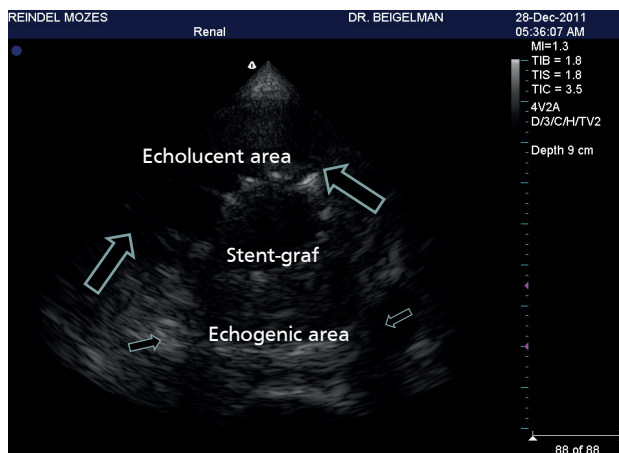
## Endoleak: Complication of endovascular treatment after abdominal aortic aneurysm

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These images (Figures 1 to 2) correspond to an 80-year-old patient who underwent infrarenal abdominal aortic aneurysm repair using a stent-graft.

Endoleaks after endovascular repair are classified into 5 types: (1)

- Type I: at the proximal, distal, or iliac occluder at tachment sites.
- Type II: lumbar collateral vessels, inferior mesenteric, middle sacral, or hypogastric artery, or polar arteries (simple: one patent vessel; complex: two or more vessels).



**Fig. 1.** Two-dimensional ultrasound with zoom in the cross-sectional view: the ultrasonographic difference between the anterior (hemorrhagic) and posterior (thrombosed) walls of the aneurysm is clearly observed.

- Type III: graft body (disconnection of the modules, manufacturing failures).
- Type IV: stent-graft porosity.
- Type V or endotension: enlargement of the sac without detectable endoleak.

The following causes are considered: a) poor surgical technique, and b) angulation of the aneurysm neck, calcification, and mural thrombi. (2, 4) The echo-Doppler is an appropriate technique for the systematic follow-up of aortic stent-grafts, together with the selective use of CT scan when ultrasound results are unclear. (4)



**Fig. 2.** portal phase CT scan; a radiodense image is observed between the arrows, corresponding to the hemorrhage inside the aneurysm.

**Video annex.** Abdominal aorta color Dopple ultrasound showing endoprosthesis and an important passage of blood flow, in red, through a 3.1 to 3.5 mm in diameter leak, toward the anterior wall of the aneurysm.

### REFERENCES

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