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CARDIOVASCULAR FLASHLIGHT

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Caval valve implantation for treatment of tricuspid regurgitation: post-mortem evaluation after mid-term follow-up

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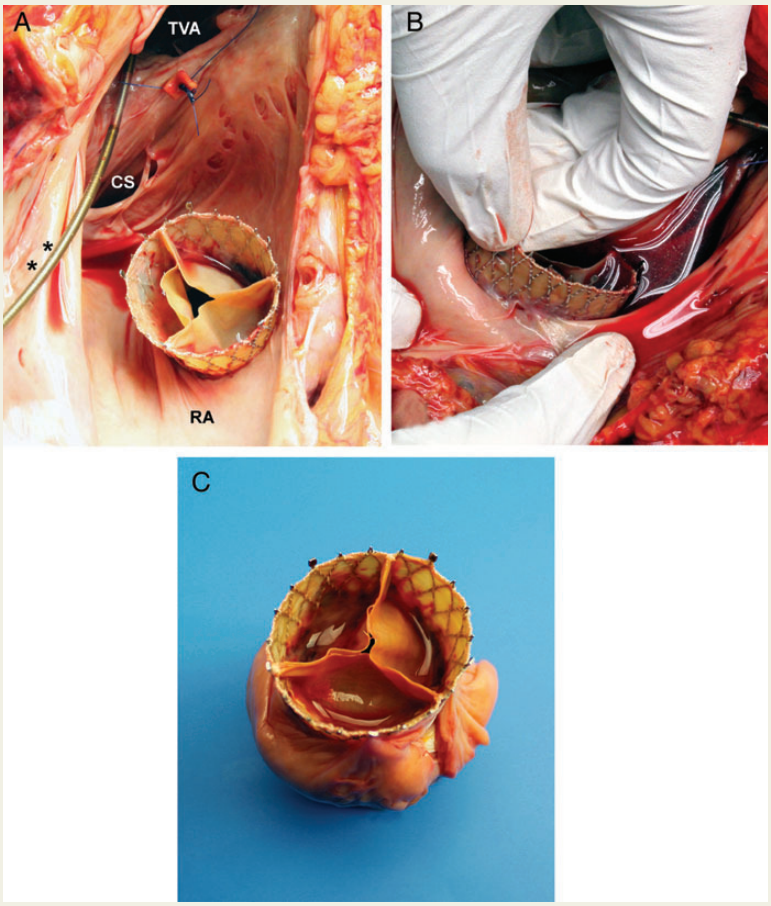
In a 79-year-old female patient with symptomatic tricuspid regurgitation (TR) 'first-in-man' transcatheter valve implantation into the inferior vena cava (IVC) was performed as compassionate treatment. Details of the procedure as well as the clinical course have been reported previously. In brief, a self-expanding pericardial valve was implanted into the IVC in a percutaneous approach through the right femoral vein. Immediate excellent valve function was observed and resulted in haemodynamic and symptomatic improvement. After an uneventful recovery, the patient was discharged from hospital and followed in our outpatient clinic.

After 3 month, she was emergently readmitted due to a large intracranial haemorrhage, which could not be treated and led to death of the patient within 48 h. Autopsy was performed, confirming an unchanged position and excellent function of the valve in the IVC (*Panel A*). The device was securely anchored with the upper valve segment protruding into the right atrium and leaving the hepatic veins unobstructed (*Panel B*). The stent struts were largely covered by fibrous tissue, fixing the device and making it unretrievable from the caval vein (*Panel C*). The leaflets were tender and mobile with sufficient coaptation and without evidence of degeneration, thrombus formation, or other causes of dysfunction.



This post-mortem study of the first human application of caval valve implantation confirms the technical feasibility, safety and device function after mid-term follow-up. This novel approach represents a percutaneous treatment option for a subgroup of patients with severe TR and treatment-refractory symptoms of venous congestion.