Spontaneous hemorrhage after the TricValve procedure

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Introduction: In patients with severe tricuspid insufficiency who are not candidates for surgery due to age or comorbidities, caval valve implantation (CAVI) has been available recently as a therapeutic option[1]. Two valves are implanted in the upper and lower vena cava to reduce the symptoms of right-sided heart failure. Patients with liver cirrhosis are prone to bleeding complications, especially abdominal, due to portal hypertension and coagulopathy[2].

Case report: 81-year-old woman with chronic heart failure, secondary pulmonary hypertension, permanent atrial fibrillation and severe tricuspid insufficiency was admitted to the Clinic for planned CAVI. In addition, the patient has cardiac cirrhosis and ischemic heart disease. The necessary image processing was done pre-procedurally, and the patient had no contraindications (EFLV >45%, Child-Pugh Score B, NYHA III, RSVP 55mmHg, TAPSE >13mm). The patient was anticoagulated with intravenous heparin during the procedure, and target ACT values were >250. A control venogram did not reveal a significant paravalvular leak. At the puncture site of the right femoral vein, hemostasis was achieved using a combination of a closure device and a "Z" suture. On the left side, hemostasis was achieved by manual compression. The early post-procedural course was complicated by left paraumbilical swelling of the abdominal wall, severe pain, hypotension and a significant drop in the red blood count. Urgent MSCT of the abdomen and pelvis verified an extensive extraperitoneal hematoma in the pelvic area and large intramuscular hematomas of both rectus abdominis muscles. Immediate exploratory laparotomy was performed, which showed no active bleeding from puncture sites. Hematomas were evacuated, and both femoral veins were sutured. The patient was sedated and mechanically ventilated and underwent standard treatment for hemorrhagic shock. A "second look" surgery was carried out three days later, and no active bleeding was found. Unfortunately, further hemodynamic instability ensued, and the patient died five days after the procedure.

Conclusion: In patients with severe tricuspid insufficiency and cirrhosis-related coagulopathy, standard intraprocedural anticoagulation for CAVI and postprocedural venous blood pressure rise can lead to severe spontaneous intra-abdominal bleeding[3].

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