When venous perforation occurs during CVC, it is safer and more reliable to adjust or withdraw the catheter under DSA guidance after a false lumen forms outside the catheter” Xu et al (2019).

Abstract:

RATIONALE: In recent years, central venous catheterization (CVC) has become widely used for hemodialysis patients. Based on 3 cases, we discussed the detection and management of venous perforation at an early stage.

PATIENTS CONCERNS: Patients 1 (male, 77 years), 2 (male, 82 years), and 3 (male, 30 years) were diagnosed with uremia and underwent hemodialysis.

DIAGNOSES: Computed tomography suggested pneumomediastinum in patient 1 and pneumothorax in patient 2 after a replacement of the temporary hemodialysis catheter. In patient 3, X-ray suggested that the tip of the catheter was approximately at the plane of the fifth thoracic vertebrate after the temporary catheter was placed.

INTERVENTIONS: In patients 1 and 2, the catheters were maintained where they were for about 2 weeks until a false lumen formed outside the catheter. In patient 3, the catheter was withdrawn at once when vein perforation was observed.

OUTCOME: In patients 1 and 2, the catheters were adjusted successfully under digital
subtraction angiography (DSA) guidance 2 weeks later. In patient 3, hemothorax developed, and a total of approximately 1000 mL of bloody fluid was drained.

LESSONS: When venous perforation occurs during CVC, it is safer and more reliable to adjust or withdraw the catheter under DSA guidance after a false lumen forms outside the catheter.

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