Abstract:

Central venous catheters (CVC) are used in many clinical settings for a variety of indications. We performed a systematic literature review concerning case reports of retained calcified fibrin sheaths after dialysis CVC removal. The aim of our study was to systematize the knowledge regarding clinical management of this phenomenon, placing special emphasis on diagnostic radiological features in different imaging modalities, including chest radiography, echocardiography, computed tomography, and magnetic resonance imaging. We discuss the most common risk factors associated with this CVC complication. In our review, we found eight cases of hemodialysis patients. The most common risk factors associated with calcified fibrin sheath formation in the analyzed cases were pro-thrombotic and pro-calcification factors related to patient comorbidities, and prolonged catheter dwell time. Differentiating between a calcified fibrin sheath (present in about 6% of patients with long-term indwelling CVC as diagnosed by computed tomography) and a retained catheter tip can be challenging. The initial diagnosis based on imaging methods was incorrect in most of the analyzed cases. This suggests that some cases of retained fibrin sheaths may remain undetected or misinterpreted. This is important in patients with known pro-thrombotic and pro-calcification risk factors and prolonged catheter dwell time. Therefore, implementation of preventive strategies, familiarity with radiological findings of this phenomenon, comparison with previous imaging studies, and an overall comprehensive assessment with clinical data is imperative.

Reference: