Catheter-related right atrial thrombosis is an under-recognized complication of central venous catheter placement. We performed a retrospective review, characterizing clinical aspects of catheter-related right atrial thrombosis (CRAT)" Tran et al (2019).

Abstract:

INTRODUCTION: Catheter-related right atrial thrombosis is an under-recognized complication of central venous catheter placement. We performed a retrospective review, characterizing clinical aspects of catheter-related right atrial thrombosis (CRAT).

METHODS: To identify cases, a literature search was conducted in PubMed and additional items selected by review of related items and bibliography review. Key clinical data were extracted and analyzed both in total and as stratified by hemodialysis versus non-hemodialysis groups.

RESULTS: A total of 68 catheter-related right atrial thrombosis events were reported in 63 patients (five recurrences, of which 4 involved catheter left in place following primary treatment). Median (interquartile range) time to CRAT diagnosis was longer among hemodialysis patients – 12 (4.0-24.0) weeks compared to 5.5 (1.8-16.1) weeks among non-hemodialysis patients. The most common presentations were asymptomatic in 16/68 (23.5%), fever/sepsis in 21/68 (30.9%), pulmonary embolism in 11/68 (16.2%), catheter dysfunction in 8/68 (11.8%), dyspnea in 8/68 (11.8%), and new murmur or valvular
dysfunction in 8/68 (11.8%) patients. Primary treatment selection was anticoagulation in 33/68 (48.5%), surgical thrombectomy in 17/68 (25.0%), thrombolysis in 12/68 (17.6%), or no active therapy in 6/68 (8.8%) patients. Primary treatment failure for anticoagulation and thrombolysis was 27.3% and 33.3%, respectively. The most common rescue therapy was surgical thrombectomy, ultimately resulting in an overall rate of 26/62 (41.9%). Overall, per-patient mortality was 13/63 (20.6%). Intracardiac tip position – 27/34 (79.4%) – overshadowed thrombophilia – 16/63 (25.4%) – as a risk factor for CRAT.

CONCLUSION: Catheter-related right atrial thrombosis is an underdiagnosed complication of central venous catheter placement. For the hemodialysis population, a fistula-first approach is advocated. While many instances were asymptomatic, the development of unexplained fever, dyspnea, catheter dysfunction, or new murmur should trigger a search for this complication.

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