

Clinical Evaluation of Intracardiac and Major Vessel Thrombosis in a Pediatric Cardiology Unit: A Single-Center Experience from Turkey

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Introduction: Experience in managing intracardiac and large vessel thrombosis in pediatric cardiology and cardiovascular surgery is limited, particularly concerning r-TPA usage. In this study, we evaluate the data gathered in our center on patients with intracardiac and major vessel thrombosis.

Methods: Enrolled in the study were 20 patients that were admitted to our hospital between January 2010-December 2013 and diagnosed with intracardiac and large vessel thrombosis. We evaluated demographic findings, primary pathologies, treatment and complications.

Results: We assessed 25 thrombus attacks that occurred at different times in 20 patients (8 female, 12 male). Mean age was 7.4 ± 7.3 years (1.2 months-22 years). Thrombus locations are summarized in **Table 1**. Four patients had sequential thrombosis. Regarding concomitant cardiac pathologies, 10 patients (50%) had complex congenital heart disease, 7 (35%) dilated cardiomyopathies (4 of them secondary to noncompaction), 2 (10%) arrhythmogenic right ventricular dysplasia, and 1 (5%) hypertrophic non-obstructive cardiomyopathy. At diagnosis, left ventricular function was reduced in 7 patients (35%). Fractional shortening was reduced all of the patients (n=6) with left ventricular thrombi; mean fractional shortening was 17.8%(10-24%). In 7 patients (28%), thrombosis was associated with cardiac surgery. Three of them (12%) (supracardiac TAPVD, cor triatriatum sinister, Taussig-Bing anomaly) developed thrombus in the early postoperative period and 4(16%) in the late period. Regarding treatment, r-TPA was used in 9 patients (36%) with thrombi in the left heart (n=7) or in the peripheral artery (n=2). An unfractionated or low molecular weight heparin (LMWH) was used in the rest. Two patients that developed cerebral thromboembolism during acute treatment later recovered without major sequelae by maintaining appropriate anticoagulation. Warfarin, aspirin, clopidogrel and LMWH were used in maintenance treatment. Mean treatment duration was 83 ± 107 days (7-510); mean follow-up period was 265 ± 220 days(6-948 days). Treatment was successful and thrombi regressed in 92% of cases. The patient with brachial artery thrombus underwent distal upper extremity amputation. None of the patients died.

Conclusions: Intracardiac thrombi in major vessels associated with the heart can be treated successfully with anticoagulants and thrombolytics. Potential embolic complications can be recognized early and long-term sequelae can be reduced with close monitoring throughout the treatment period.

Table 1. Locations of cardiovascular thrombi (*Some patients had multiple locations)

Thrombus Location	n*
Total	27
Right heart	11
- Atrium/Ventricle	9/2
Left heart	7
-Atrium/ Ventricle	1/6
Located in the vessels	9
Major vessels associated with the heart	5
- Pulmonary artery bifurcation	3
- Pulmonary vein opening	1
- Inferior vena cava	1
Peripheral major vessels	4
- Popliteal / Brachial artery	1/3