Successful PTA to Paget-Schroetter Disease in a Case With Antiphospholipid Antibody Syndrome

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Introduction

Paget-Schroetter disease, also known as Paget-von Schrotter disease or upper extremity deep vein thrombosis (DVT) is a medical condition in which blood clots form in the deep vein of the arms. These DVT typically occur in the axillary vein or subclavian vein. The standard treatment include anticoagulation and thrombolysis therapy. Here we report a case of antiphospholipid antibody syndrome who developed Paget-Schroetter disease. Successful percutaneous transluminal angioplasty (PTA) was performed after medical refractory DVT was encountered.

Case Report

A 32 year-old man without prior medical history suffered from acute swelling of left arm for one week after left shoulder sprain after lifting heavy things. Shortness of breath developed for 2 -3 days hence he called on our ER for help. CxR (Figure 1) disclosed no specific finding and Chest CT disclosed thrombus over right lower pulmonary artery and left subclavian and axillary vein (Figure 2). Ultrasound also disclosed thrombus in left subclavian and axillary vein (Figure 3).

Fig. 1. CxR disclosed no specific finding.

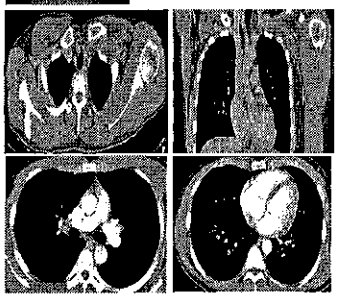

Fig. 2. Chest CT disclosed thrombus over right lower pulmonary artery and left subclavian vein

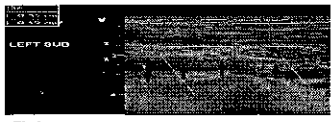

Fig.3. Ultrasound disclosed thrombus over left subclavian vein.

During hospitalization, antiphospholipid antibody syndrome with protein S deficiency , hyperhomocysteinemia was also diagnosed. His homocysteine level was 15 umol/L (4.45-12.42), anti-cardiolipid IgG was positive, Beta 2 glycoprotein IgG was positive (31.1 units, negative < 20), Beta 2 glycoprotein IgM was positive (80.6 units, negative < 20), and protein S was 48.6% (normal > 60).

Standard dose of heparin and urokinase was given with poor effect and persistent arm swelling. Ultrasound disclosed recanalization but much residual thrombus (Figure 4). Medical refractory DVT was noted hence PTA was performed (Figure 5).

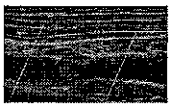

Fig. 4. Follow up ultrasound disclosed much residual thrombus with poor recanalization of left subclavian vein.

Fig. 5. A-C) Angiography disclosed totally occluded left subclavian and axillary vein with much thrombus. D-G) Heparin and urokinase was given. The lesion was crossed with a .035" Terumo wire then serial balloon dilatation was performed with 4.0/60 mm Fox balloon at 14 atm, 5.0/80 mm Fox balloon at 14 atm, 70/40 mm Fox balloon at 16 atm, and a 8.0/80 mm Reef balloon at 20 atm. H-I) Final angiography disclosed patent left subclavian vein with residual thrombus found. A 5 Fr sheath was left over left basilic vein as route for urokinase infusion after PTA.

After PTA, urokinase infusion was given directly via the sheath left over left basilic vein. Follow up angiography two days later disclosed patent left subclavian vein with little residual thrombus. Ultrasound showed patent left subclavian vein (Figure 6) and arm swelling resolved after above managements (Figure 7).

Fig. 6. Follow up angiography and ultrasound disclosed patent left subclavian vein with little residual thrombus.

Fig. 7. Left arm swelling resolved after PTA and thrombolysis therapy.

In conclusion, PTA can be an effective treatment modality when medical refractory DVT was noted, such as in this case with Paget-Schroetter disease.