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Successful Sonography-Guided Thrombin Injection Treatment for Scrotal Hematoma after Cardiac Catheterization in an Adolescent

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In general, cardiac catheterization is a safe procedure, though several complications occur rarely.[1] Here, we report a case of scrotal hematoma after trans-femoral vascular access, which was successfully treated by sonography-guided thrombin injection.

A 14-year-old boy diagnosed as double inlet left ventricle was admitted for diagnostic evaluation of the Fontan conduit due to low oxygen saturation. Before an extracardiac conduit Fontan operation, he had twice received cardiac catheterization without any complications. Since the operation, he has been taking enalapril 1.25 mg twice a day and aspirin 100 mg daily. Initial laboratory findings were as follows: platelets were 312,000/μL, prothrombin time was 14.0 seconds, activated partial thromboplastin time was 31.8 seconds, and fibrinogen was 286 mg/dL.

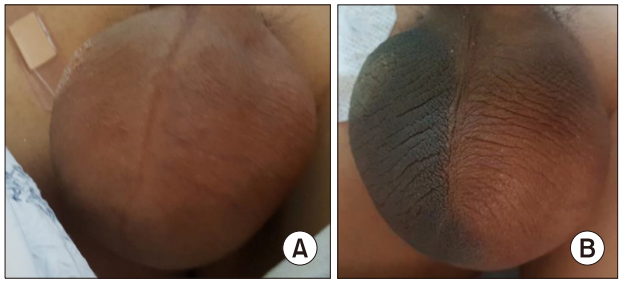

FIG. 1. (A) Scrotal hematoma on 1 day after cardiac catheterization. (B) Scrotal hematoma on 6 days after sonography-guided thrombin injection.

Vessel access was successful at once by 4 French (Fr) sheath for the right femoral artery below the inguinal ligament (below common femoral artery, CFA) and 6 Fr sheath for the right femoral vein. After 40 minutes of the procedure, the femoral sheath was removed and bleeding control was followed by manual compression until active bleeding was not visible. Then, a sandbag was applied and bed rest was recommended for 6 hours. The following day, the patient complained of swelling and pain of the scrotum (Fig. 1A). Physical examination showed a discolored and swollen scrotum with tenderness at the right inguinal area without any palpable mass. Emergent Doppler sonography was performed and there was 41×20 mm sized pseudoaneurysm with 7 mm width neck in the Rt. CFA (Fig. 2A). A sonography-guided thrombin injection (100 unit) was performed into the pseudoaneurysm without any complications and bed rest was recommended for 6 hours with further compression by the sand-bag. Successful occlusion of pseudoaneurysm was confirmed with intact adjacent arterial flow. On the 3rd day after procedure, the inguinal area sonography showed prominent vascular structure from the

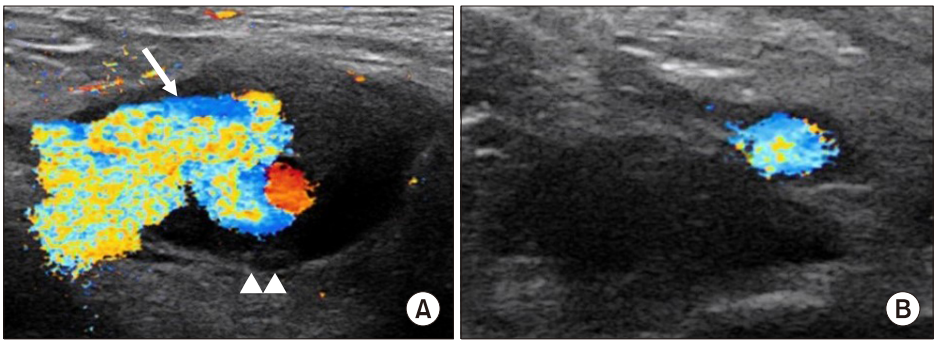

FIG. 2. (A) Pseudoaneurysm (arrowheads) and blood flow from right common femoral artery (arrow) 1 day after cardiac catheterization. (B) Residual pseudoaneurysm and well-occluded state of right common femoral artery 2 days after sonography-guided thrombin injection.

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Rt. CFA and the size of hematoma at the right inguinal area and scrotum was not changed (Fig. 2B). Scrotal swelling and pain had improved after 6 days from the procedure (Fig. 1B) and he was discharged with aspirin and enalapril. After 1 month, scrotal area color was normalized without pain.

The most common clinical presentation of pseudoaneurysm is inguinal swelling or pain with skin ecchymosis.[1-3] There are several risk factors for femoral artery pseudoaneurysm such as being over 75 years, female, obese, having hypertension, and anti-platelet and/or anticoagulant therapy.[2,4]

Sonography-guided thrombin injection of a pseudoaneurysm is considered the treatment of choice in iatrogenic pseudoaneurysms because of its high success rate (up to 97%) and low risk.[2] Due to rapid scrotal area swelling and color change with decreased perfusion to the right testis in this patient and risk factors of taking anti-platelet therapy, we performed prompt sonography-guided thrombin injection of the pseudoaneurysm in the inguinal area to prevent scrotal necrosis.

Trans-femoral catheterization must be performed carefully to avoid the development of a pseudoaneurysm and if the patient has risk factors and is complaining of clinical symptoms, it is important to confirm the pseudoaneurysm as soon as possible by sonography and appropriate treatment must be established in case of scrotal hematoma like in this patient.

CONFLICT OF INTEREST STATEMENT

None declared.

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