



Trauma and reconstruction

Partial segmental thrombosis of the corpus cavernosum post prolonged run and MRI changes during follow-up: A case report

Luboš Rybár^{a,*}, Patrik Hesko^a, Boris Kollárik^a, Jana Andrisová^b

^a Department of Urology, Bory Hospital, Ivana Kadlečková 2, Lamač, 841 03, Bratislava, Slovakia

^b Radiológia s.r.o., St. Cyril and Methodius Hospital, University Hospital in Bratislava, Antolská 11, 851 07, Bratislava, Slovakia

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ABSTRACT

Partial segmental thrombosis of the corpus cavernosum (PSTCC) is a rare condition predominantly occurring in young men. We report a case of a 44-year-old man presenting with a spontaneous painful mass in the right proximal cavernous corpus (CC) one day following a prolonged run. An ultrasonography and MRI identified a thrombus in the CC. Anticoagulants and analgesics were prescribed, a non-surgical approach was chosen. Symptoms disappeared in a week as apparent by a reduction of thrombus on the MRI. Three years later, a residual thrombus with fibrosis was detected. Patient continues to be asymptomatic at the time of follow-up.

1. Introduction

Partial segmental thrombosis of the corpus cavernosum is one of the very rare conditions described in the literature. It presents as a palpable mass, accompanied by pain in the CC. PSTCC can occur rarely due to cavernosal fibrous web impairing crural venous outflow and urologists should be aware of this condition. USG and MRI are usual diagnostic tools. Anticoagulant treatment is commonly initiated while surgical intervention is performed only in case of conservative treatment failure. The aim of our case report is to describe the cause, the treatment, and the appropriate management of PSTCC.

2. Case presentation

A 44-year-old male, an amateur marathon runner, came to the hospital with a two-day history of spontaneous painful formation in the proximal part of the right CC, and occurrences of night erection without sexual activity. A firm, painful and fixed resistance in the right CC extending into the right crus was palpable in flaccid penis. In anamnesis, the last prolonged run was performed a day before the incident, no other anamnestic information was relevant.

Urine, electrolytes and CRP were in a normal range. Coagulation revealed normal PT (Quick) 113 %, INR (0.94), APTT (23 s), TT (20 s) and fibrinogen (2.52g/l). Hemogram showed no abnormal values, with platelets level of $261 \times 10^9/l$.

By using 6 MHz transducer, a grey-scaled USG combined with colour

Doppler of the penis, long hypoechogenic mass, 18mm in diameter with irregular hyperechogenicity was spotted (Fig. 1). Following an urgent MRI, a 9 cm acute thrombus with a heterogeneous low signal within T2-weighted images was detected. T1-weighted images revealed hyperintense signal - an acute thrombus (Fig. 2).

The patient was prescribed oral Anopyrin 100 mg once a day, subcutaneous Nadroparin 7600 IU twice a day, and no PDE-5i. Pain relief was noticed after a week of treatment. Complete hematology examination was negative. Due to eosinophilia, LMWH was replaced by Enoxaparin 6000 IU once a day, and Anopyrin was prescribed for 6 months in total. For pain, NSAID and paracetamol were offered. The possibility of a surgical intervention was discussed with the patient.

After a month, MRI showed a size reduction in subacute thrombus with expanded right CC with diffuse isointense T1 signal and only isolated structures of high T1 signal (Fig. 3).

After 6 months of LMWH treatment, only a small reduction of the mass, but of higher elasticity was recognised.

Three years later, residual PSTCC with fibrosis were detected on the MRI - low (hypointense) signal of peripheral margin in T2-weighted images and high (hyperintense) signal in T1-weighted images. Potential bilateral fibrous septum at the level of cruro-cavernosal junction was detected in T2-weighted images-hypointense distal structure (Fig. 3). The patient remained asymptomatic with good ability to reach erection.

* Corresponding author.

E-mail address: lubosrybar@gmail.com (L. Rybár).

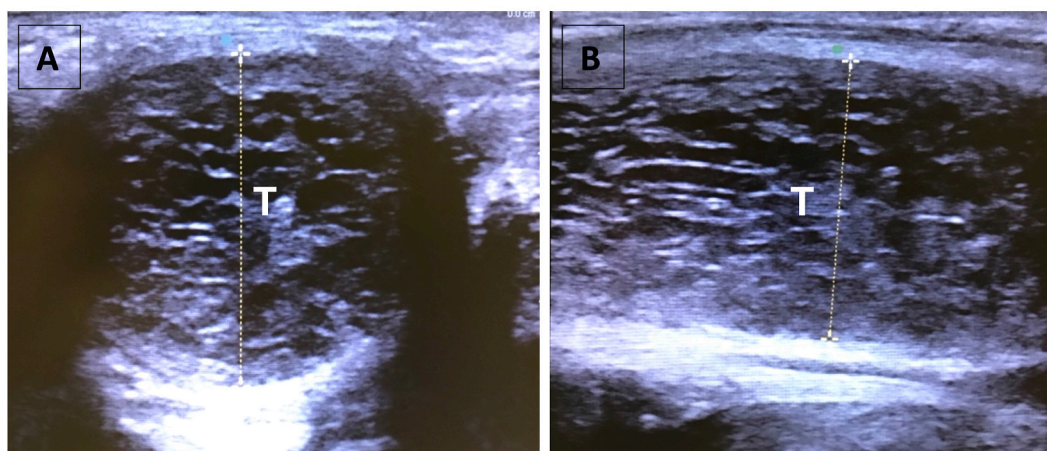


Fig. 1. USG transversal axis (A) and longitudinal axis (B) of the right corpus cavernosum with 18mm diameter thrombus (T).

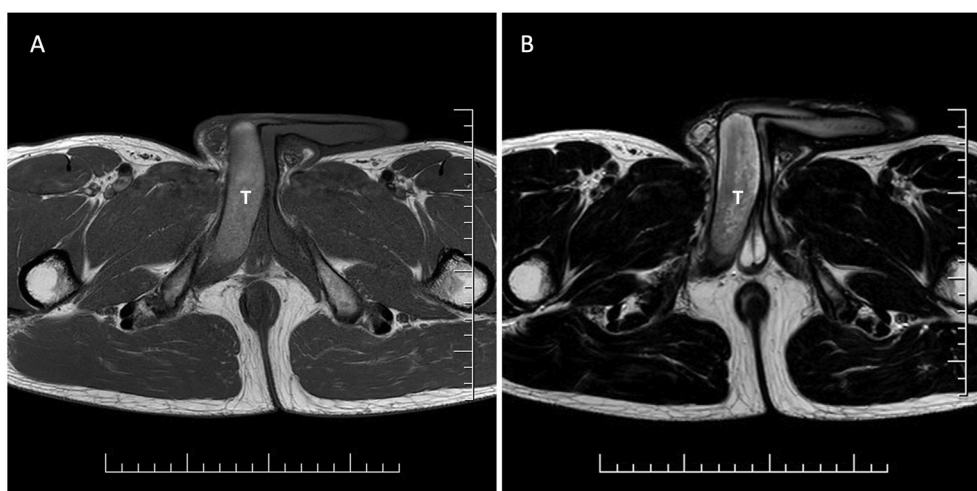


Fig. 2. An acute thrombus (T) in T1 (A) and T2-weighted transversal MRI (B).

3. Discussion

PSTCC is described in about 56 cases, especially in young men under the age of 30. Possible mechanism of origin represents microtrauma of the CC.¹ Risk factors include sickle cell anemia or thrombophilia, dehydration, surgery, tumors, long immobilization, sports, vigorous sexual activity, drug and alcohol abuse.^{1,2} Higher doses of tamsulosin and secondary priapism were also reported.³

Symptoms include pain, palpable resistance,^{2,4} erection. The strength of the erection depends on the position of the thrombus.² PSTCC is almost always unilateral, however, bilateral findings were also reported.⁵ Based on surgical findings, a fibrous septum may split CC into a proximal and a distal part. Microtrauma may trigger thrombus formation. Weyne et al. (2015) suggest that MRI results show a cavernosal fibrous web impairing crural venous outflow.⁵ USG, CT and MRI prove the presence of thrombus in corpus cavernosum.¹

Conservative treatment with Aspirin, NSAID, and LMWH has similar results to surgery. The review of the literature shows that the majority of the patients began a treatment with therapeutic doses of LMWH and simultaneous anti-aggregant therapy.⁵ Corporotomy with thrombus evacuation, intracavernosal irrigation of saline and primary closure should be reserved for cases, when pain control cannot be obtained by analgesics.^{2,5} Anticoagulants improve ED in 3–6 months without other pharmacotherapy.⁴

After thrombus resolution, MRI is helpful in identifying fibrous

septum, and may explain the cause of thrombosis. After three years of follow-up in our asymptomatic patient, the MRI still displayed a residual thrombus with a fibrosis in CC. Based on a fibrosis, follow-up was prolonged for more than one year and the patient was informed about any unknown potential complications and recurrence as recommended.⁵

4. Conclusion

Idiopathic PSTCC should be considered in patients with spontaneous, unilateral, painful palpable perineal swelling. MRI might show an intracavernosal fibrous septum - a potential reason of thrombus formation. Early diagnosis and conservative treatment impact functional results. Surgery should be reserved for conservative approach failure – symptomatic painful persistence of a fibrotic non-resolved residual cavernosal thrombus. Minimum of one year follow-up is recommended. Treatment and follow-up of asymptomatic patients with a residual thrombus is a topic for further discussion and conclusion.

Consent

Signed consent was obtained from the patient.

Financial disclosure

Non reported.

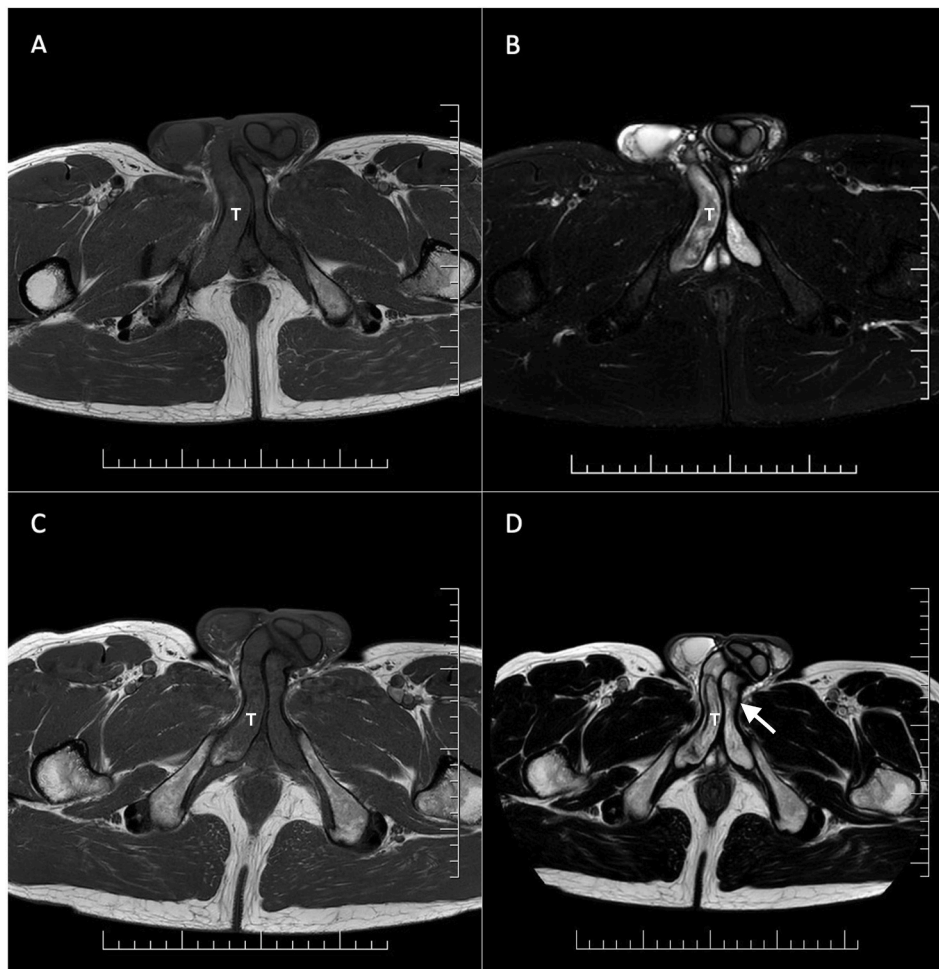


Fig. 3. Regression of thrombus (T) size one month later in transversal T1 (A) and T2-weighted MRI (B). A fibrosis of residual thrombus after three years in transversal T1 (C) and T2-weighted image of matured unilateral residual thrombus and potential contralateral fibrous septum (D).

Declaration of competing interest

None reported.

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