

## IDIOPATHIC PARTIAL THROMBOSIS OF THE RIGHT CORPUS CAVERNOSUM

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**Key-word:** Corpus cavernosum

**Background:** A 16-year-old Caucasian male presented with acute perineal pain and retroscrotal swelling during the hours following an extensive bike-ride. His past medical history was unremarkable.

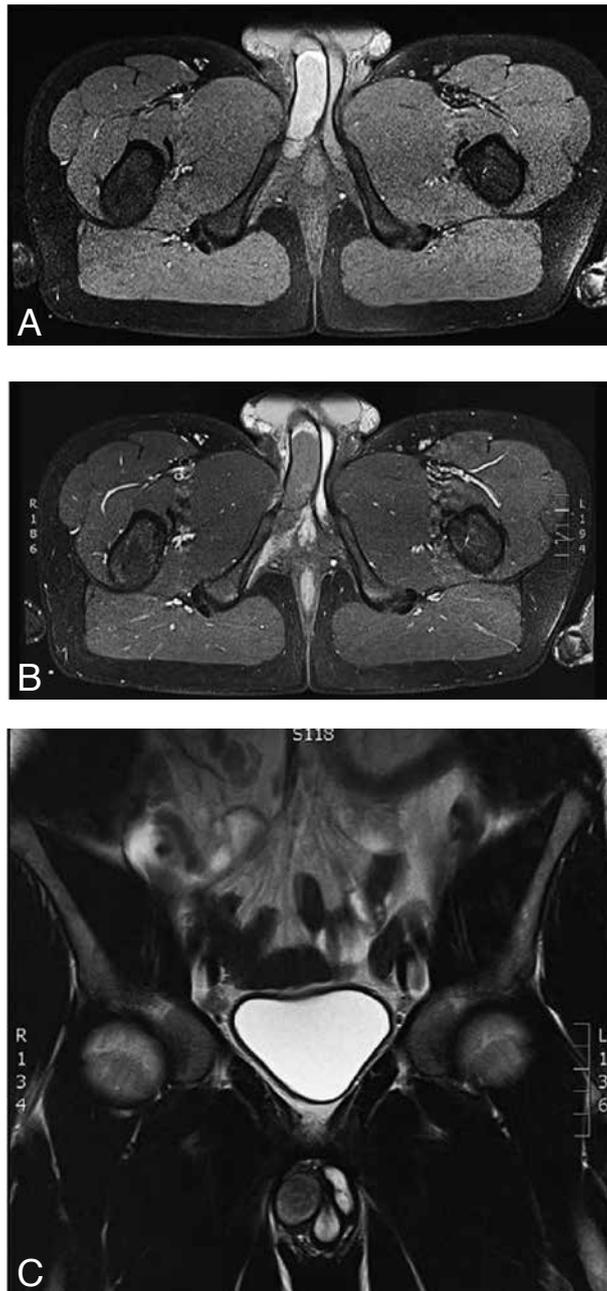


Fig.  $\frac{1A}{1B}{1C}$

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## Work-up

MRI of the pelvis (Fig. 1) shows on A (unenhanced axial T1-weighted series with fatsat) an asymmetric delineation of the corpora cavernosa at the base of the penis. Swollen aspect (8 cm × 2 cm) of the proximal part of the right cavernous body and compressive mass effect on the left corpus cavernosum. The lesion is iso-intense to slightly hyperintense compared to the muscle tissue, with more hyperintense regions near the midline. To the anterior the lesion shows a sharp hyperintense demarcation when compared to the normal corpus cavernosum.

On axial T1-weighted series with fatsat after intravenous administration of gadolinium (B), no evident enhancement of the proximal right corpus cavernosum is seen, while the left corpus readily captures the contrast medium.

On coronal T2-weighted series (C), the right corpus cavernosum is swollen and predominantly hypo-intense when compared to the contralateral corpus cavernosum.

## Radiological diagnosis

In concordance with the clinical data (typical complaints occurring after a long bike ride) the MRI confirms the diagnosis of *idiopathic partial thrombosis of the right corpus cavernosum*.

## Discussion

Idiopathic Partial Thrombosis of the corpus cavernosum (IPT) is a rare urological condition in which the proximal part of one corpus cavernosum is thrombosed, usually occurring in young men. Only a couple dozen cases have been reported in current literature. Its etiology remains uncertain: associations have been suggested between IPT of the corpus cavernosum and malignant pathology (leukemia, lymphoma), micro-trauma due to extensive bicycle riding (as was the case here), vigorous sexual intercourse, drug abuse and hematologic disease (sickle cell disease, congenital spherocytosis).

In the past, a definitive diagnosis could only be made during surgery. Nowadays, MRI is used to confirm the diagnosis when anamnestically or clinically suspected. Clinically a painful perineal mass, tender on palpation of the proximal cavernosal region is seen. Usually ultrasonography and/or sometimes CT scan of external male genitalia are performed in light of a differential diagnostic work-up as these are more readily available as diagnostic tools in an acute situation. MRI beats both of these technical investigations in the ability to visualize abnormalities of the penile soft tissue (septum and

thrombus) and thus allows for effective differentiation between IPT and other possible pathologies such as Peyronie's disease, penile malignancies, penile fracture, complete thrombosis and penile abscess.

On MR images the lesion will be evident as a unilaterally distended segment of the corpus cavernosum, frequently compressing the contralateral corpus cavernosum due to mass effect of the thrombosed segment. The thrombotic blood can present itself with a variable signal intensity dependent on the length of time between onset of thrombosis and the moment the MRI scan is taken. In general, T1-weighted images will show this segment to be hyperintense and T2-weighted series will show it to be hypo-intense when compared to the normal cavernous structure. The typical septum (hyperintense on T1-weighted scan) which separates the thrombosed part of the corpus (always proximal) from the non-thrombosed (distal) in IPT may be bilateral or unilateral (like in this case), even though the thrombus is by definition unilateral.

Treatment of IPT is currently a point of discussion as – historically – surgery with drainage and shunting had grown to be the go-to answer to this problem. However conservative medical treatment with NSAIDs, antibiotics, analgesics and/or antibiotics has recently been attempted in several cases with marked success in terms of preservation of erectile function. These results have led to surgery being reserved for those cases in which conservative treatment has failed.

## Bibliography

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