Thrombosis of the deep dorsal penile vein and corpora cavernosa of the penis as the first symptoms of colon cancer. Case report and literature review

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ABSTRACT
The case describes an 86-year-old man with thrombosis of the deep dorsal vein and corpora cavernosa of the penis who developed symptoms 4 months before hospitalisation. An accurate imaging diagnostics supplemented with a biopsy of the corpus cavernosum confirmed the initial diagnosis. Moreover, an adenocarcinoma of the hepatic flexion of the colon with numerous metastatic lesions, including those to the crus of penis were found. Diagnostic and therapeutic difficulties were described and the results obtained were discussed in the context of available literature.

Key words: deep dorsal penile vein thrombosis, corpus cavernosus thrombosis, metastatic colorectal cancer
INTRODUCTION
The deep dorsal vein of the penis lies centrally in the dorsal part
of the penis between the tunica albuginea of the corpora cav-
erosa and the deep penile fascia (Buck’s fascia). The vein trans-
ports blood from the glans and corpora cavernosa of the penis
to the deep dorsal vein complex (Santorini plexus). Cutting off
of the blood outflow in the vein leads to swelling and partial,
or complete, penile erection [1]. Symptoms of the penile deep
dorsal vein thrombosis (PDDVT) and accompanying corpora cav-
erosa thrombosis are diagnosed extremely rarely and the aeti-
ology of the disease is not fully understood. The most common
symptom observed is moderately painful and relatively hard
swelling of the entire, or part of the penis.

Spontaneous occurrences of PDDVT have also been described
[1–3]. Differentiation should also take into consideration the
thrombosis of the superficial dorsal vein of the penis (Mondor’s
disease), which is far more prevalent and has a different clinical
picture, and pathological penile erection (priapism) [4].

CASE REPORT
In April 2020, an 86-year-old male patient was admitted to the
hospital due to non-painful, hard swelling of the penis and pro-
gressing weakening of the urine stream that he had been expe-
riencing for 4 months. The patient claimed there had been no
injury and was unable to describe any other tangible reasons of
the condition. The patient did not present any other symptoms
in the urinary or digestive tract.

During physical examination the penis was found to be swollen
in its entire length, non-painful during palpation, without ele-
vation and stiffness typical to erection during intercourse or in
priapism (fig. 1). The foreskin was of correct length, however it
could not be shifted beyond the groove of the glans. The skin of
the penis and scrotum was healthy. Rectal examination showed
a smooth, flexible and symmetric prostate with clear bounda-
ries that was enlarged to around 45 mm. The patient presented
symmetric, pasty swelling of the lower limbs and suffered from
dyspnoea at rest.

The ultrasound examination of the urinary tract showed normal
kidneys, bladder with thick, smooth walls and symmetric pro-
state of 30 ml capacity. About 150 ml of residual urine was found.
Laboratory tests showed evidence of significant anemization
(Hb 8.8 g/dl) and an increased concentration of D-dimers (3350).

The patient was catheterised with a 12Ch Foley catheter – a slight
resistance was encountered in the bulbar part of the urethra.

The patient was given a transfusion of 2 units of concentrated red
blood cells. After an internal medicine and cardiology consulta-
tion and suspecting venous thrombosis of the lower limbs, the
patient was given anti-oedema therapy (furosemide) and antico-
gulant therapy (low molecular weight heparin).

Doppler examination did not confirm an impaired venous flow
in the lower limbs; however, it did detect the lack of flow in the
deep dorsal vein of the penis and in the corpora cavernosa of the
penis (fig. 2). Computerised tomography of the abdominal cavity
and the pelvis detected a tumour of the hepatic flexion of the co-
lon with multiple metastatic lesions in the liver and lungs (fig. 3).

Due to ambiguous clinical picture of the changes observed, the
patient was qualified for a core-needle biopsy (Tru-Cut needle),
which confirmed thrombosis of the corpora cavernosa of the
penis. Adenocarcinoma tissue was found in one of the samples
collected during biopsy (fig. 4).
Magnetic resonance imaging (MRI) of the pelvis detected a 3 cm metastatic lesion in the base of the penis and in both corpora cavernosa (fig. 5).

FIGURE 5.
MRI imaging of the pelvis and penis. Visible thrombotic changes in the corpora cavernosa (arrows) and adenocarcinoma metastasis (triangles).

Conservative treatment and antibiotic therapy administered with 2 units red cell concentrate transfusion improved the general health condition of the patient, alleviated localised symptoms and had positive impact on clinical and laboratory parameters.

The patient did not give his consent for further diagnostic procedures (colonoscopy) and was discharged home on his own request.

During the 6 weeks follow-up, the patient retained the Foley catheter, however he did not continue the prescribed course of treatment. The patient reported an improvement in his general condition and a slight reduction of the swelling of the penis.

DISCUSSION
Deep dorsal penile vein thrombosis is hardly ever described and there are no firm recommendations on the diagnosis and treatment of the condition [1]. Only few cases of PDDVT have been described [1, 3, 5]. Literature describes slightly more cases of corpora cavernosa thrombosis that may present with the
Deep dorsal penile vein thrombosis is a rare disease of the penis and is most often a symptom of a coexisting prevalent disease, such as cancer or haematological diseases. Conservative treatment brings only slight improvement and it is necessary to expand diagnostic process in order to detect cancer.

**Summary**

Deep dorsal penile vein thrombosis is a rare disease of the penis and is the first one when deep dorsal penile vein thrombosis and the cavernous vein thrombosis were the consequence of the spread of the colorectal cancer.

**References**


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