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Penile Mondor's Disease: A Series of Three Cases and Literature Review

Penil Mondor Hastalığı: Üç Olgu Serisi ve Literatür Derlemesi

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ABSTRACT Penile Mondor's disease (superficial thrombophlebitis of the penile dorsal vein) is a rare clinical presentation. It is palpated as a rigid spermatic cord resembling structure on the dorsal surface of the body of the penis. It is generally recanalized in 6-8 weeks spontaneously or with medical treatment. Among the reported causes of penile Mondor's disease, mechanical trauma is the most accused and patients usually define prolonged or intensive sexual activity 24-48 hours before. Although medical history and physical examination are sufficient for diagnosis, color Doppler ultrasonographic evaluation of superficial penile veins is also useful. In this article, the diagnosis and treatment of penile Mondor's disease were presented based on three cases. All three patients were treated with conservative methods, without the need for surgery.

Keywords: Penile Mondor's disease; penile diseases; venous thrombosis; sexual health

ÖZET Penil Mondor hastalığı (penil dorsal venin yüzeyel tromboflebiti) oldukça nadir görülen bir klinik tablodur. Penis gövdesinin dorsal yüzünde, sert spermatik kord benzeri bir yapı olarak palpe edilir. Sıklıkla 6-8 haftada spontan veya medikal tedavi ile rekanalize olur. Penil Mondor hastalığının bilinen nedenleri arasında en çok suçlanan faktör mekanik travmadır ve hastalar genellikle 24-48 saat öncesinde uzun süreli veya yoğun cinsel aktivite öyküsünden bahsederler. Tanıda, tıbbi öykü ve fizik muayene yeterli olmasına rağmen, yüzeysel penil venlerin renkli Doppler ultrasonografik değerlendirmesi de yararlıdır. Bu yazımızda, üç olgu üzerinden penil Mondor hastalığının tanı ve tedavisi sunulmuştur. Üç hasta da cerrahi gerekmeksizin, konservatif yöntemlerle tedavi edilmiştir.

Anahtar Kelimeler: Penil Mondor hastalığı; penil hastalıklar; venöz tromboz; cinsel sağlık

Thromboses of superficial veins were first defined by Mondor as sclerosing thrombophlebitis in superficial veins of the anterior chest wall in 1938.[1] Braun and Falco defined thrombophlebitis in the penis and other areas.[2] Helm and Hodge reported isolated superficial thrombophlebitis of the dorsal vein of the penis for the first time in 1958.[3]

Penile Mondor's disease (superficial thrombophlebitis of the penile dorsal vein) is a rare clinical presentation. It is palpated as a rigid spermatic cord resembling structure on the dorsal surface of the body of the penis. It is generally recanalized in 6-8 weeks spontaneously or with medical treatment.[4] There are many factors in the etiology of Penile Mondor's disease, but the most accused are the traumas that occur in the penis during sexual intercourse.[5] In general, patients present with a painful sensation of the superficial vein of the penis in the acute period, or with a palpable rigid formation that occurs in the subacute period. Although medical history and physical exam-

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ination are sufficient for diagnosis, color Doppler ultrasonographic (USG) evaluation of superficial penile veins is also useful.[6]

In this case series report, accompanied by literature, we aimed to present three cases who admitted to the emergency room after prolonged and intensive sexual intercourse or penile trauma, and who underwent medical treatment with the diagnosis of Penile Mondor's disease.

CASE REPORTS

CASE 1

A 36 year-old male patient was admitted to the emergency room with a painful and rigid palpable mass on his penis which had been more evident for about three days. On physical examination, a subcutaneous linear mass was palpated on the left dorsolateral surface of the body of the penis (Figure 1). The patient had a prolonged sexual intercourse history within the past week based on his medical history was otherwise uneventful. His medical history. In Doppler USG performed after urology consultation, a thrombus was detected in the subcutaneous superficial vein on the left dorsolateral of the penis.

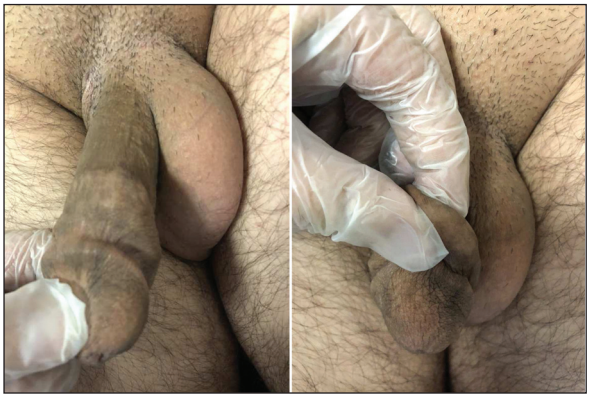

FIGURE 1: Painful and hard thrombophlebitis that is palpated in the left dorsolateral surface of the penis body.

CASE 2

A 35 year-old male patient was admitted with a rigid palpable mass on the dorsal surface of the penis for nearly four days. On physical examination, a palpable mass and cellulitis, which are parallel to the coronal sulcus, were detected on the dorsal surface of the penis (Figure 2). The patient had the story of hitting a soccer ball on his penis about a week ago. His medical history was otherwise uneventful. In Doppler USG, 2.8 mm thrombophlebitis was observed in the superficial vein on the dorsal surface of the body of the penis.

CASE 3

A 25 year-old male patient was admitted with a painless mass on the dorsal surface of his penis for about five days. On physical examination, a mass was palpated on the trace of the superficial vein starting from the penis root on the dorsal surface of the penis body and showing continuity along the shaft (Figure 3). When the anamnesis of the patient was detailed, a week ago there was a story of hitting a soccer ball on his penis. His medical history was otherwise uneventful. The Doppler USG showed thrombophlebitis in the superficial vein on the dorsal surface of the penis.

All three patients received mucopolysaccharide polysulphate gel tid, two times a day diclofenac sodium 75 mg SR bid, cefuroxime axetil 500 mg bid and acetylsalicylic acid 500 mg once daily for four

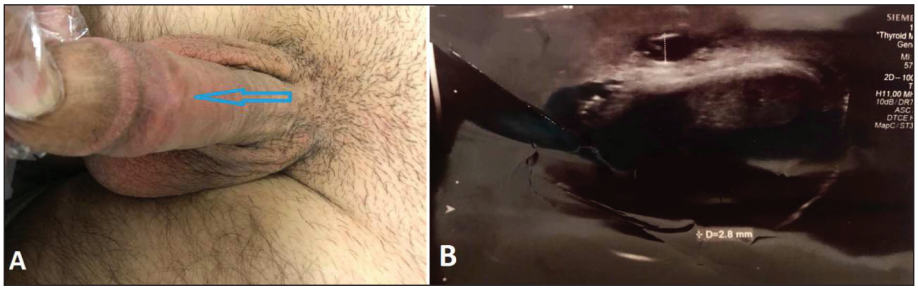

FIGURE 2: (A) Palpable mass and hyperemic cellulitis area on the dorsal surface of the penis, parallel to the corona sulcus. (B) The appearance of thrombophlebitis in the the Doppler USG examination that fits this area.

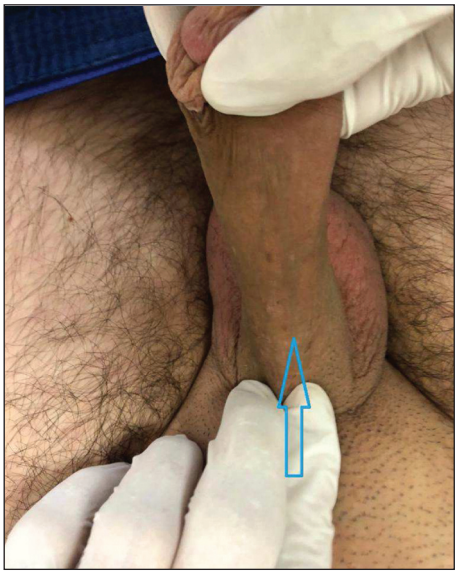

FIGURE 3: Thin thread-like mass in the area of the dorsal part of the penis that fits the superficial vein trace.

weeks and were suggested not to have sexual intercourse during this period. Four weeks later they were re-evaluated with physical examination and Doppler USG. It was observed that the thrombophlebitis of the superficial vein had completely disappeared in all the three patients. Informed consent was obtained from all three patients about the case report.

DISCUSSION

Penile Mondor's disease is a rare clinical entity with an incidence of 1.4%.[5] Despite its low incidence, it is considered that many individuals who have the disease recover without referring to the doctor as it is ultimately a self-limiting disease. It is generally seen in sexually active men between the ages of 21 and 70.[5] The mean age of our cases was 32 and all were sexually active.

Many reasons have been shown in the cases reported so far in the literature. The etiology includes enteroviral infections, the irritant effect of menstrual blood, tuberculosis, circumcision-related scar tissues, surgical applications of pelvic or external genital system and tumors located within the pelvis.[7] However, among the reported causes of penile Mondor's disease, mechanical trauma is the most accused, and patients usually define prolonged or intensive sexual activity 24-48 hours before.[5] Endothelial necrosis formation due to the stretching and torsion of penile superficial veins and the resultant activation of the coagulation mechanism through the released materials constitute one of the claimed opinions.[8] The Virchow triad, which consists of damage to the integrity of the vessel wall, changes in blood flow, and coagulation tendency, is thought to play a role in the pathogenesis.[4] In a histopathological evaluation on a series of ten patients, Kumar et al. detected vasodilation, presence of plump endothelial cells, proliferation in the connective tissue on vessel walls and venous thrombosis.[5] In our cases, one had a prolonged sexual activity in the past week, and the other two had a history of trauma.

There are three clinical stages in penile Mondor's disease: acute, subacute and recanalization stage. The acute stage is formed in the first 24 hours due to vascular endothelial damage secondary to prolonged sexual activity in men between the ages of 20 and 40. The subacute stage defines the period after the first week. Recanalization is the stage in which the thrombus disappears and blood flow restarts.[7]

The disease is diagnosed through medical history and physical examination. Although it has an asymptomatic course generally, some patients have pain during penile erection. On physical examination, a thrombosed vein (hard cord-like structure) on the dorsal surface of the penis, which can be painful, is diagnostic.[9] In most patients, the lesion is closer to the radix penis, but it may rarely be close to the sulcus coranarius.[7] Sclerosing lymphangitis, Peyronie's disease and penile angioedema should be considered in the presence of a painful, fibrotic lesion in the penis.[7,10] Sclerosing lymphangitis is characterized by thickened and dilated lymphatic vessels whose morphology is serpiginous. Peyronies disease results from a thickening of the tunica albuginea and presents as a well-defined fibrotic plaque on the penis.[7] As in our cases, it is generally seen on the dorsal or dorsolateral surface of the penile shaft, but it has been reported that it is rarely seen on the ventral surface.[11] It is almost always in the superficial dorsal vein, but it is uncommonly seen in the circumflex vein.[12]

Color Doppler ultrasonographic evaluation of superficial penile veins is the definitive diagnostic tool for the demonstration of thrombophlebitis.[13] It

may be considered in painful fibrotic lesions on the dorsal of the penis if there is still suspicion in the differential diagnosis despite medical history and physical examination. If the vein appears noncompressible, this is consistent with the diagnosis of venous thrombosis.[7] The thrombosed superficial veins should first be detected with a gray-scale sonogram. These are subcutaneous, uncompressible tubular structures with anechoic or hypoechoic contents. Next, color Doppler sonograms can be applied in the absence of a flow signal inside the tubular structure.[14] Rarely, the use of magnetic resonance imaging (MRI) has been reported in some cases. However, these cases were generally reported as complicated cases which cannot be identified through the initial examinations.[6] In order to eliminate the possibility of hematoma or an iatrogenic lesion after a prostate biopsy, magnetic resonance angiography may help.[14] In our series, a rigid mass was palpated in all three patients, Doppler USG scan confirmed thrombophlebitis and no further radiological imaging was required.

In treatment, anticoagulants and antibiotics are often used in the acute stage, anti-inflammatory drugs such as salicylates, ibuprofen and indomethacin and local heparin creams are used in the subacute-chronic stage.[4] In mild cases, observation may be recommended without any treatment. It is quite important to remind sexual abstinence to the patient during the treatment period.

Many treatment combinations have been applied in the literature. Eren et al. used 750 mg oral cefuroxime axetil tablet two times a day, topical chondroitin polysulphate cream three times a day and 400 mg ibuprofen tablet two times a day in one patient and oral anti-inflammatory and subcutaneous low molecular weight heparin treatment in the other in their series of two cases.[15] While Kartsaklis et al. used 8 mg lornoxicam, 325 mg aspirin and 500 mg cefuroxime and heparin containing cream per day, Nazir and Khan used 50 mg diclofenac two times a day, 325 mg enteric-coated aspirin two times a day and 200 mg ofloxacin and heparin containing cream two times a day.[7,16]

Bayraktar et al. found no statistically significant difference among patients taking only antibiotics and patients taking both antibiotics and aspirin in their study investigating the effect of antiplatelet treatment on the resolution rate and time in penile Mondor's disease.[17] Davarcı et al. used 500 mg acetylsalicylic acid for 14 days and 600 mg pentoxiflylline in additionally. They concluded that this treatment protocol compared to previous treatment protocols helped to solve thrombosis in a shorter time.[18] In a case series of 30 patients, Özkan et al. reported that all patients were treated conservatively without any need for surgical intervention and at the end of two months, they gained their normal erectile functions and the complaints regressed completely.[4]

Surgical thrombectomy or removal of the superficial vein may be recommended in cases that do not respond to conservative treatment or that recur frequently.[19] In these cases, it has been reported that surgical application reduces pain and induration on the skin, and its aesthetic results are better. In a series of 25 patients, Al-Mwalad et al. reported that only two patients did not respond to conservative treatment and underwent thrombectomy.[13] Similarly, dorsal vein resection was performed only in two of 10 patients in the series of Sasso et al.[20]

Despite the self-limitation of the disease, the generally acknowledged idea is that medical treatment is suitable to relieve the symptoms and shorten the process in the acute period. In our series, it was observed that the palpable lesion completely disappeared, and symptoms regressed in the first-month check of the patients after antibiotherapy, anti-inflammatory, anti-aggregate and heparinized gel administration.

Penile Mondor's disease is a rare condition in which successful results can be acquired through conservative treatments. It should be kept in mind in patients presenting with pain and especially rigidity in the dorsal of the penis.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

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