

Penile Mondor's Disease: Primum Non Nocere!*

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Purpose: Penile Mondor's disease (superficial thrombophlebitis of the dorsal vein of the penis) is a rare clinical diagnosis. It is an easily diagnosed and treated disease. Nevertheless, when reviewing the literature, we considered that unnecessary tests are carried out for diagnosis. In this study, we aimed to indicate the redundancy of Doppler ultrasonography for diagnosis of penile Mondor's disease.

Materials and Methods: Seven patients with the clinical presentation of penile Mondor's disease were included in the study. In the first two patients, penile Doppler ultrasonography was performed for diagnostic purposes by applying a vasoactive intracavernosal agent. This diagnostic procedure was not implemented in the next five patients.

Results: Physical examinations revealed cord-like thickening lesions on dorsal and dorsolateral penis. In the first two patients, who penile Doppler ultrasonography with an intracavernosal vasoactive agent was used for diagnostic purposes, was developed priapism. We did not use penile Doppler for more patients as this would be unethical according to us.

Conclusion: Recovery from penile Mondor's disease is usually spontaneous and smooth. A simple physical examination is sufficient for diagnosis, and palliative treatment is effective. For the diagnosis of this disease, unnecessary tests should be avoided so that patients are not harmed.

Keywords: penis; blood supply; thrombophlebitis; physiopathology; thrombosis; diagnosis, differential; penile diseases; ultrasonography.

INTRODUCTION

Superficial vein thrombosis was initially described by Mondor in 1939 in the subcutaneous veins of the anterolateral thoracoabdominal wall.⁽¹⁾ Penile Mondor's disease was first described by Braun-Falco in the 1950s. The incidence of this disease has recently been estimated to be 1.39%.⁽²⁾ Penile Mondor's disease is characterized by thrombosis in the superficial dorsal penile vein. Patients complain of a generally painful or painless cord-like induration on the dorsal and dorsolateral aspect of the penis. The etiology of penile Mondor's disease is not completely understood, but various causes have been reported, including penile trauma, prolonged sexual abstinence, vigorous and prolonged sexual intercourse, infection, constrictive elements used during certain sexual practices, pelvic tumors and pelvic surgery.⁽³⁻⁵⁾ In the literature the most common cause is stated as prolonged sexual intercourse.^(3,4) On physical examination of the dorsum and dorsolateral surface of the penis, a hard, spermatic cord-like structure is palpated. From the literature, it is clear that Doppler ultrasonography is often carried out for diagnostic purposes as a further investigation (with or without an intracavernosal vasoactive agent).⁽⁶⁻¹³⁾

MATERIALS AND METHODS

After study was approved by the local institutional review board seven patients with the clinical presentation of penile Mondor's disease were included in this study.

Between June 2012 and April 2014, seven patients with preliminary diagnoses of penile Mondor's disease were prospectively evaluated, treated and followed up. Detailed history was taken from all patients. All patients had complained of swelling on the dorsum of the penis. There were also three patients who complained of pain. A patient without having pain in the dorsal aspect of the penis had mild dysuria complaint. On physical examination, all patients presented subcutaneous cord-like indurations on the penis' dorsal/dorsolateral surface. A mean of 3.6 days (2-10 days) elapsed between the onset of symptoms and seeking medical attention at the outpatient clinic.

In the first two patients, advanced examination was performed using diagnostic color Doppler ultrasonography with an intracavernosal vasoactive agent (60 mg papaverine hydrochloride) injection after obtaining their informed consent. Further investigation was not carried out in the next five patients. For the three patients who had pain, dexketoprofen trometamol (25 mg) pills were administered twice daily. Clinical improvement was judged by improvement in the induration and pain. To resolve their anxiety, the patients were informed about the benign nature of the disease. It was recommended that they refrain from sexual activity during treatment.

RESULTS

The mean age of patients was 34.2 years (range, 22-45). None of the patients had specific anamnesis before the development of painful or painless superficial thrombosis

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* Primum non nocere is a Latin phrase that means "first, do no harm."

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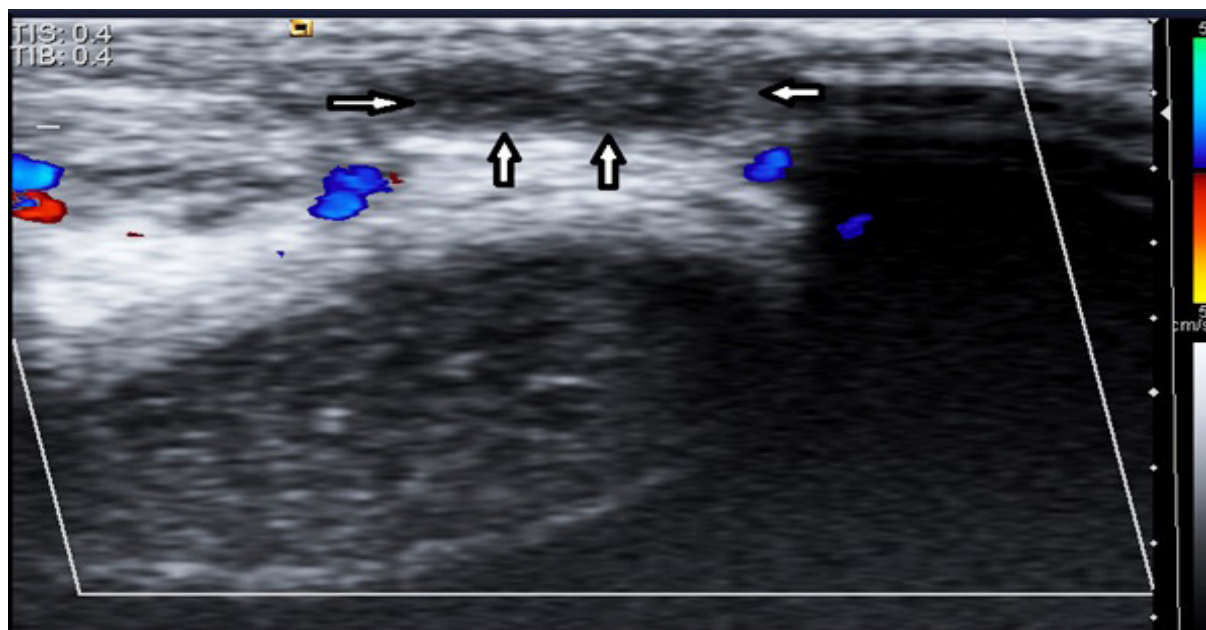


Figure. Ultrasound showing thrombosis of the superficial dorsal vein of the penis (arrows). When there was current flow in the other veins of the penis, this was not monitored in the superficial dorsal vein.

of the penis. Physical examination in four patients showed cord-like indurations parallel to the coronal sulcus. Three patients had cord-like induration in the dorsal aspect of the proximal penis. Color Doppler ultrasonography was carried out on the first two patients. The ultrasonography findings were similar for these patients, including an increase in the diameter of superficial dorsal vein, non-compressibility and intraluminal thrombus in the superficial dorsal vein (**Figure**). The venous current spectrum in this vein was not observed via color Doppler examination.

After intracavernosal vasoactive agent injection (60 mg papaverine hydrochloride), Doppler ultrasonography did not show any disorder in the cavernosal arteries. Following intracavernosal vasoactive agent administration, the first patient's average cavernosal artery diameter was 0.7 mm, peak systolic velocity was 47 cm/sec on the right and 49 cm/sec on the left; moreover, end diastolic velocity was -3 cm/sec on the right and -2 cm/sec on the left. In the second patient, the mean artery diameter was 0.6 mm; peak systolic velocity was 34 cm/sec on the right and 32 cm/sec on the left; and end diastolic velocity was -5 cm/sec on the right and -2 cm/sec on the left (**Table**). Both of these patients developed priapism after Doppler ultrasonography. Fortunately, the patients, taking our suggestions into consideration pre-procedure, applied to the hospital when an erection maintained six hours after the procedure. Patients were treated without any problems by applying corpus cavernosum drainage with a 21 gauge butterfly needle. The next five patients did not undergo diagnostic examination except for the patient

history and physical examination. All patients who were invited to the weekly follow-up, improved completely within 3–5 weeks of the onset of symptoms, as indicated in the literature.

DISCUSSION

Penile Mondor's disease is a benign condition that is spontaneously resolved. However, it can sometimes create anxiety in patients. Patients almost always complain of cord-like induration on the penis; this can sometimes be painful. In terms of etiology, various reasons for this condition are given, particularly prolonged sexual activity, but the exact cause is not known. Our patients had no specific medical history. In our region, patients with a conservative sociocultural background may be reluctant to provide accurate medical history regarding sexual activity. On physical examination of patients with penile Mondor's disease, the subcutaneous cord-like mobile induration is easily palpable.

In the literature, diagnostic penile Doppler ultrasonography with an intracavernosal vasoactive agent injection has been reported.⁽¹¹⁻¹³⁾ Such examination was carried out in our first two patients; these patients developed priapism. We decided that although the priapism was corrected with proper treatment, ultrasonography was an unnecessary examination. Thus, we concluded that this type of imaging for diagnosis to be harmful because penile Mondor's disease is considered to have a benign course. As a result, we decided that Doppler examination was unethical and we did not want to use it for our next patients, and it was

Table. The first two patients' Doppler ultrasonography results with application of an intracavernosal agent.

Patients	Mean Cavernosal Artery Diameters (mm)	Peak Systolic Velocity on the Right (cm/sec)	Peak Systolic Velocity on the Left (cm/sec)	End Diastolic Velocity on the Right (cm/sec)	End Diastolic Velocity on the Left (cm/sec)
1	0.7	47	49	-3	-2
2	0.6	34	32	-5	-2

not employed for the next five patients.

All of the patients were improved within 3–5 weeks, as expected. Dexametopfen trometamol (25 mg) pills were given twice daily to patients experiencing pain. Penile Mondor's disease patients are usually young and sexually active. In these patients, erectile function is generally normal and the risk of developing priapism is higher than in patients with erectile dysfunction after penile Doppler ultrasonography with intracavernosal vasoactive agent injection. We think that priapism is a much more serious condition than penile Mondor's disease when considering the possible consequences.

Penile Mondor's disease is easily recognizable with medical history taking and physical examination. The patient consistently presents with a mobile, cord-like induration on the dorsum and dorsolateral aspects of the penis which has become thickened and adherent to the overlying skin. We do not consider that additional scrutiny is required. To arrive at these results, we do not consider that more patients need to be examined.

Sclerosing lymphangitis and Peyronie's disease have been emphasized in differential diagnosis of penile Mondor's disease.⁽¹⁰⁾ The morphology of sclerosing lymphangitis is serpiginous and it is characterized by thickened and dilated lymphatic vessels. Peyronie's disease results from a thickening of the tunica albuginea and presents as a well-defined immobile fibrotic plaque on the penis.

CONCLUSION

Although penile Mondor's disease is fairly uncommon, it is easily diagnosed. It improves with conservative treatment or spontaneously, but the diagnosis is important because the condition may create fear in patients. In our view, patients should not be exposed to diagnostic penile Doppler ultrasonography with an intracavernosal vasoactive agent injection, as this is unnecessary and has the potential to cause serious harm. As noted in the literature, if the greatest cause of this disease is prolonged sexual intercourse, these investigations should be contraindicated. *Primum non nocere!*

CONFLICT OF INTEREST.

None declared.

REFERENCES

1. Nachmann MM, Jaffe JS, Ginsberg PC, Horrow MM, Harkaway RC. Sick cell episode manifesting as superficial thrombophlebitis of the penis. *J Am Osteopath Assoc.* 2003;103:102-4.
2. Kumar B, Narang T, Radotra BD, Gupta S. Mondor's disease of penis: A forgotten disease. *Sex Transm Infect.* 2005;81:480-2.
3. Rodríguez Faba O, Parra Muntaner L, Gómez Cisneros SC, Martín Benito JL, Escaf Barmadah S. Thrombosis of the dorsal penis vein (of Mondor's phlebitis). Presentation of a new case. *Actas Urol Esp.* 2006;30:80-2.
4. Koh JS, Suh HJ, Choe HS, et al. Superficial thrombophlebitis of the dorsal vein of the penis (penile Mondor's disease). *Korean J Urol.* 2004;45:399-401.
5. Boscolo-Berto R, Raduazzo DI. Penile Mondor's disease: long term functional follow-up. *Urol J.* 2012;9:525-6.
6. Kraus S, Ludecke G, Weidner W. Mondor's disease of the penis. *Urol Int.* 2000;64:99-100.
7. Lilas LA, Mumtaz FH, Madders DJ, et al. Phimosis after penile Mondor's phlebitis. *BJU Int.* 1999;83:520-1.
8. Sasso F, Gulino G, Basar M, Carbone A, Torricelli P, Alcini E. Penile Mondor's disease: An underestimated pathology. *Br J Urol.* 1996;77:729-32.
9. Ozkara H, Akkuş E, Akpınar H, Alıcı B, Hattat H. Superficial dorsal penile vein thrombosis (penile Mondor's disease). *Int Urol Nephrol.* 1996;28:387-91.
10. Swierzewski SJ 3rd, Denil J, Ohl DA. The management of penile Mondor's phlebitis-Superficial dorsal penile vein-thrombosis. *J Urol.* 1993;150:77-8.
11. Han HY, Chung DJ, Kim KW, Hwang CM. Pulsed and color Doppler sonographic findings of penile Mondor's disease. *Korean J Radiol.* 2008;9:179-81.
12. Ozel A, Issayev F, Erturk SM, Halefoglu AM, Karpaz Z. Sonographic diagnosis of penile Mondor's disease associated with absence of a dorsal penile artery. *J Clin Ultrasound.* 2010;38:263-6.
13. Benson CB, Doubilet PM. Ultrasound and Doppler evaluation of the penis. In: *Introduction to Vascular Ultrasonography.* 4th ed. Ed. Zwiebel WJ. Philadelphia, PA: WB Saunders Co. 2000. p. 481–8.