



HHS Public Access

Author manuscript

Urol Video J. Author manuscript; available in PMC 2020 September 01.

Published in final edited form as:

Urol Video J. 2020 September ; 7: . doi:10.1016/j.urolvj.2020.100047.

The use of ultrasonography in the evaluation and management of peyronie's disease

Manuel R. de Jesús^a, Ranjith Ramasamy^a, Emad Ibrahim^a, Manuel Molina^a, Thomas A. Masterson III^{a,b,*}

^aDepartment of Urology, University of Miami, Miller School of Medicine, Miami, FL, USA

^bBruce W. Carter VA Medical Center, division of Urology, Miami FL, United States

Keywords

Peyronie's disease; Erectile dysfunction; Ultrasonography; Imaging modalities

Objective:

To outline the steps in the ultrasonographic evaluation of Peyronie's disease and determine its use in the diagnosis, classification and treatment of this disorder.

Design:

Video presentation

Setting:

Outpatient Urology clinic.

Patient(s):

All patients with Peyronie's disease undergoing penile ultrasonography who signed a written, informed consent for video and audio recording.

Intervention(s):

Alprostadil + papaverine + phentolamine intracavernosal injections, penile ultrasonography, phenylephrine intracavernosal injections.

This is an open access article under the CC BY-NC-ND license. (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

*Corresponding author. Tmasterson@miami.edu, Tmasterson@med.miami.edu (T.A. Masterson III).

Disclosure

The authors report no conflicts of interest in this work.

Supplementary materials

The video related to this article can be found online at: doi:10.1016/j.urolvj.2020.100047.

The following is the video related to this article Video 1.

Main Outcome Measure(s):

Penile plaque classification, penile blood flow and degree of penile curvature.

Result(s):

During the period November 2018-December 2019, 156 patients were evaluated for Peyronie's disease using ultrasonography, from which 109 patients presented calcified plaques. Out of these, 59 (45.1%) patients were found to have type 2 plaques, making this one the most common type of plaque. The average age in this group of patients was 59.8 ± 6.0 years, the average degree of curvature was $49.4 \pm 23.0^\circ$, and the average duration of symptoms was 27.2 ± 36.9 months. During the vascular evaluation with Doppler ultrasonography, 23 (14.7%) patients presented PSV $25 < 30 \text{ cm}^3/\text{s}$. Degree of curvature was not found to be associated with the severity of calcification ($p = 0.17$). This video demonstrates the advantages that ultrasonography provides in the evaluation and management of Peyronie's disease compared to other imaging modalities. It avoids radiation, easily detects plaques and calcification, and is more familiar to urologists. We outline the steps of the procedure; the possible findings during the penile tissue evaluation; the different types, location and size of plaques; the direction of penile curvature and deformity, and the possible findings on Doppler ultrasonography, which can further guide the management of these patients Figs. 1-4, Tables 1-4.

Conclusion

- Penile Doppler ultrasound is a useful tool in the evaluation and management of Peyronie's disease.
- Understanding the type of calcification and degree of curvature can aid to decide the management of Peyronie's disease.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Funding

None.

References

- [1]. Pawłowska E, Bianek-Bodzak A, Imaging modalities and clinical assesment in men affected with Peyronie's disease, Polish J. Radiol [Internet] 76 (3) (2011 7) 33–37 [cited 2019 Dec 17] Available from <http://www.ncbi.nlm.nih.gov/pubmed/22802839>.
- [2]. Gelman Joel, et al., Peyronie's disease information and examples, The center for reconstructive urology (2019) <http://www.centerforreconstructiveurology.org/peyronies-disease/> (Accessed 12 April 2020).
- [3]. Gelman Joel, et al., How to straighten a bent penis - plication, The center for reconstructive urology (2019) <http://www.centerforreconstructiveurology.org/peyronies-disease/surgery-plication/> (Accessed 12 April 2020).

- [4]. Gelman Joel, et al., Penis graft surgery to straighten curvature, The center for reconstructive urology (2019) <http://www.centerforreconstructiveurology.org/peyronies-disease/surgery-graft/>.
- [5]. Pramard Madhumita, Masterson John M. Masterson Thomas A. III, The role of imaging in the diagnosis and management of Peyronie's disease, Current Opinion in Urology 30 (3) (2020) 283–289, doi:10.1097/MOU.0000000000000754. [PubMed: 32205808]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

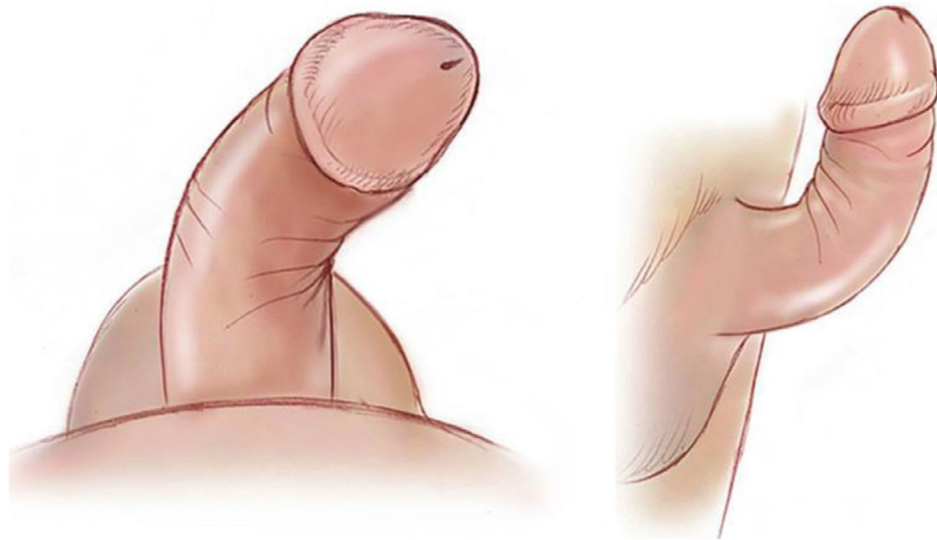


Fig. 1.
Peyronie's disease illustration.
Gelman, Joel, et al. "Peyronie's Disease Information And Examples". *The Center For Reconstructive Urology*, www.centerforreconstructiveurology.org/peyronies-disease/. [2].

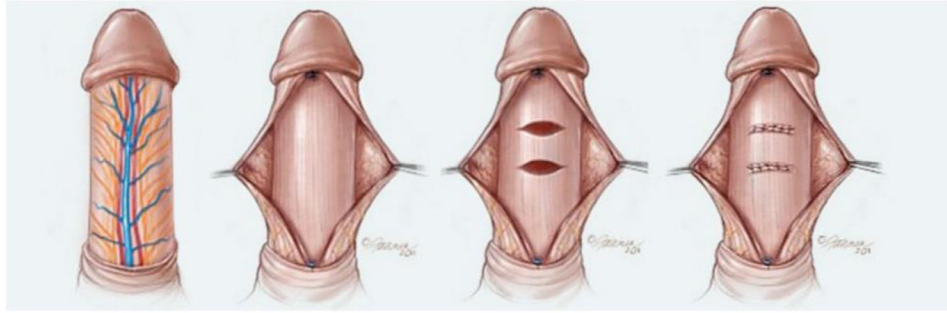


Fig. 2.

Plication surgery illustration.

Gelman, Joel, et al. "How To Straighten a Bent Penis - Plication". *The Center For Reconstructive Urology*, www.centerforreconstructiveurology.org/peyronies-disease/surgery-plication/. [3].

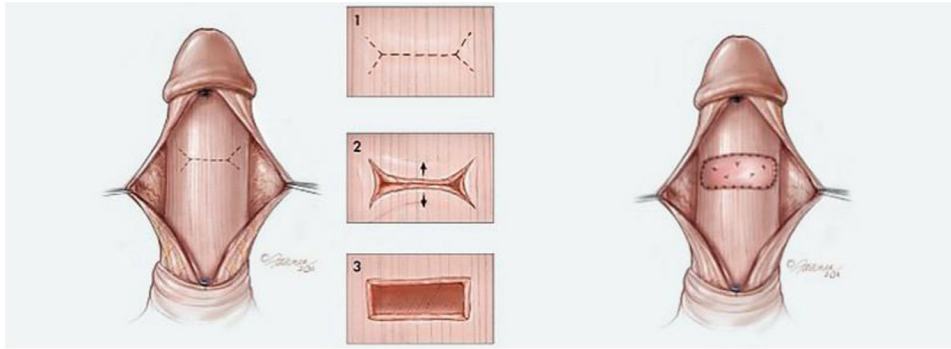


Fig. 3.
Grafting surgery illustration.
Gelman, Joel, et al. "Penis Graft Surgery To Straighten Curvature". *The Center For Reconstructive Urology*, www.centerforreconstructiveurology.org/peyronies-disease/surgery-graft/ [4].

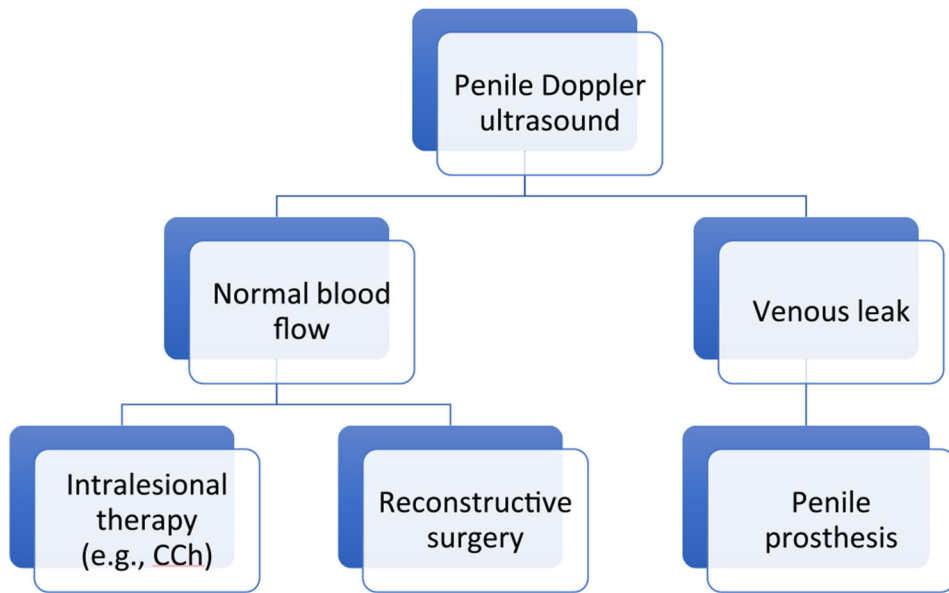


Fig. 4. Treatment of Peyronie’s disease based on penile Doppler ultrasonography findings. Pramar M, Masterson J, Masterson T. Current Opinion in Urology. 2020 [5].

Table 1

Peyronie's disease plaque typing chart.

Plaques in Peyronie's Disease	
Types of plaques	Characteristics
Type 1	Tunica albuginea thickening with slight or no shadowing.
Type 2	Tunica albuginea with moderate calcification and partial shadowing.
Type 3	Tunica albuginea calcification with complete shadowing.

Pawłowska E, Bianek-Bodzak A. Imaging modalities and clinical assesment in men affected with Peyronie's disease. Polish J Radiol [Internet]. 2011 Jul [cited 2019 Dec 17];76(3):33–7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22802839> [1].

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 2

Prospective evaluation of calcification in patients with Peyronie's disease evaluated in the University of Miami Hospital, Department of Male Reproductive Medicine, in the period November 2018-December 2019.

Prospective Evaluation of Calcification			
	Type 1	Type 2	Type 3
N (%)	33 (30.2)	59 (45. 1)	17 (15.6)
Age (years)	53.8 ± 12.0	59.8 ± 6.0	55.3 ± 7.9
Curvature (degrees)	36.9 ± 16.0	49.4 ± 23.0	48.2 ± 23.8
Duration of symptoms (months)	38.8 ± 61.7	27.2 ± 36.9	17.6 ± 12.6

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 3

Patients with Peyronie's disease who were candidates for collagenase clostridium histolyticum treatment in the University of Miami Hospital, Department of Male Reproductive Medicine, in the period November 2018-December 2019.

Candidates for Collagenase Clostridium Histolyticum			
	Noncalcified	Calcified	p
N (%)	26 (28.3)	66 (71.7)	
Curvature (degrees)	46.1 ± 14.7	51.2 ± 17.6	0.17
Duration of symptoms (months)	39.5 ± 61.2	22.6 ± 30.3	0.34

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 4

Vascular evaluation of patients with Peyronie's disease in the University of Miami Hospital, Department of Male Reproductive Medicine, in the period November 2018-December 2019.

Vascular evaluation Vascular parameter	N (%)
PSV < 25 cm ³ /s	18 (11.5%)
PSV 25 < 30 cm ³ /s	23 (14.7%)
EDV > 5 cm ³ /s	12 (7.7%)

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript