

RADY 417 Case Presentation

Rashi Vora
8/20/19

Focused patient history and workup

- Previously healthy 31 year old male
- Presented to Family Medicine clinic with nodular, irregular tissue in proximal penile shaft in the setting of using a "ring" to cut off the circulation of his penis during sex with his wife.
- No significant pain or other systemic symptoms

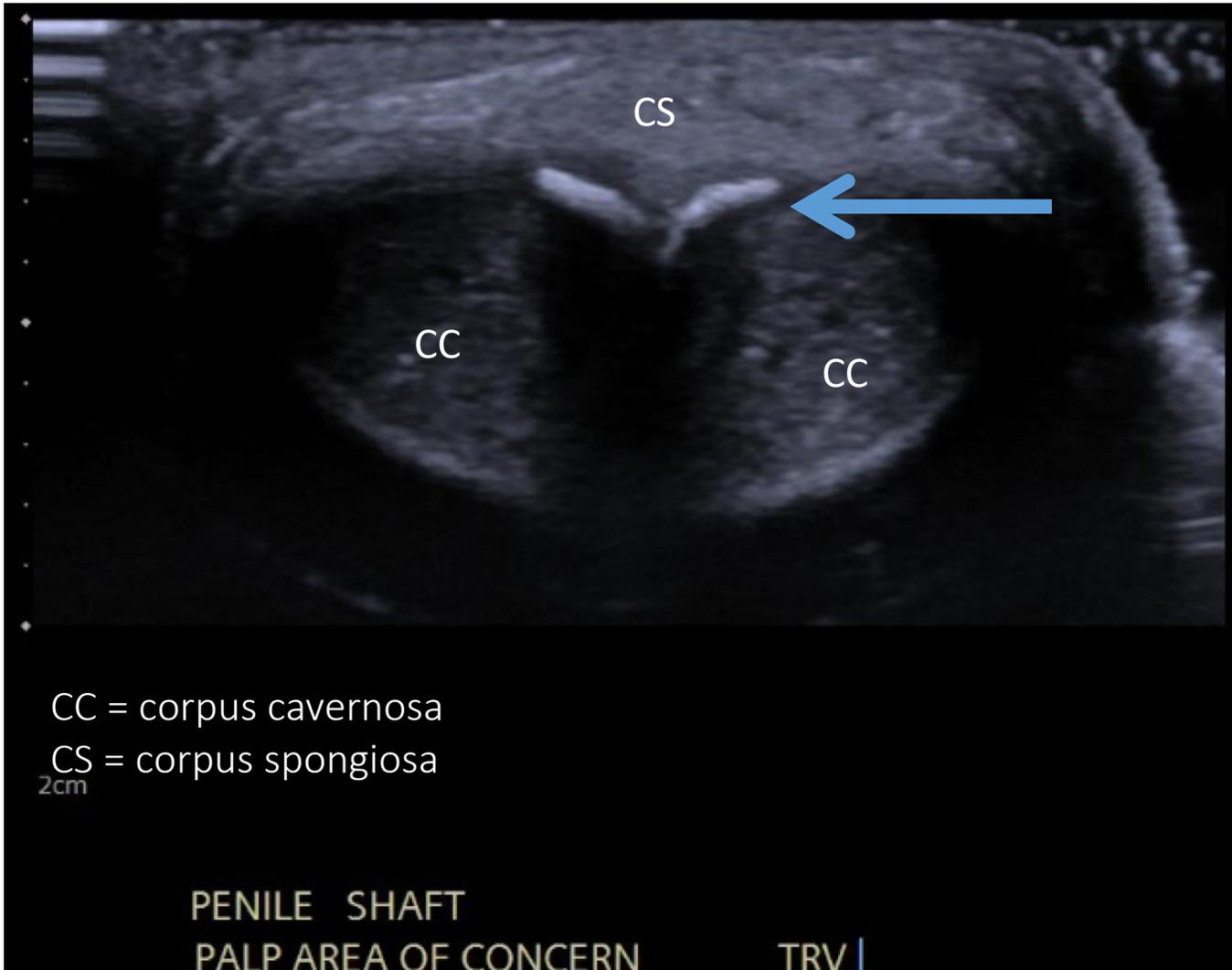
Differential Diagnosis

- Sclerotic tissue from penile injury
- Peyronie's disease
- Congenital ventral curvature
- Sclerosing lymphangitis (rare)
- Malignancy – epithelioid or angiosarcoma (rare)

List of imaging studies

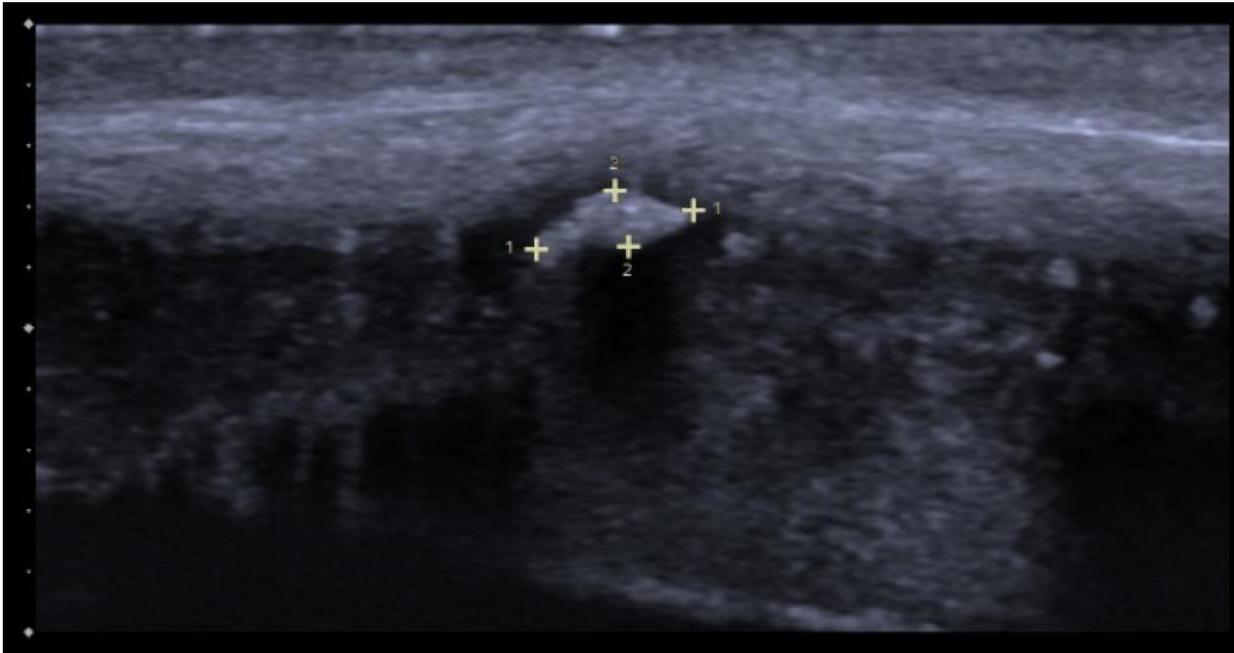
- US scrotum and penis

US Penile Shaft – Transverse Axis



- Calcified plaques positioned along the ventral surface of the corpora cavernosa consistent with peyronie's disease

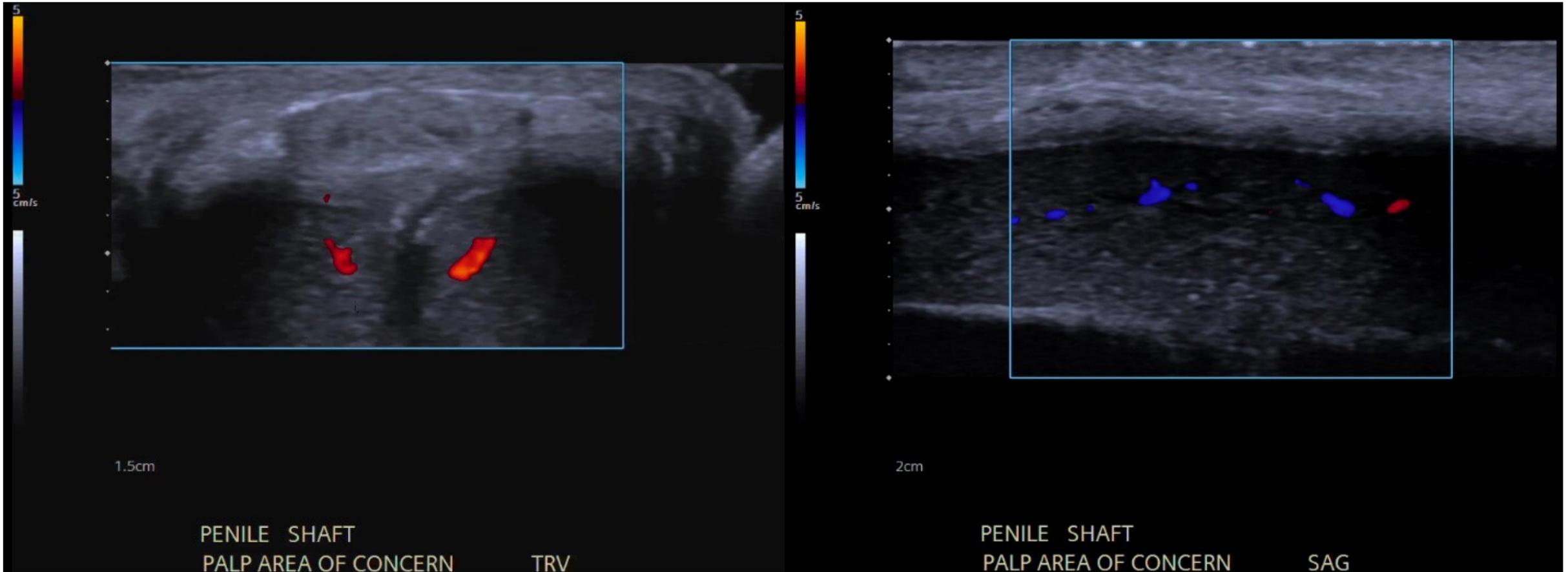
US Penile Shaft – Longitudinal Axis



- The largest calcification measures up to 5 x 3 x 2 mm positioned along the right corpus cavernosum



US Penile Shaft w/ Doppler



- Color dopplers show patent cavernous arteries in both transverse axis and longitudinal axis

Patient treatment or outcome

- Patient was referred to urology for further management

Discussion: Imaging for Peyronie's Disease

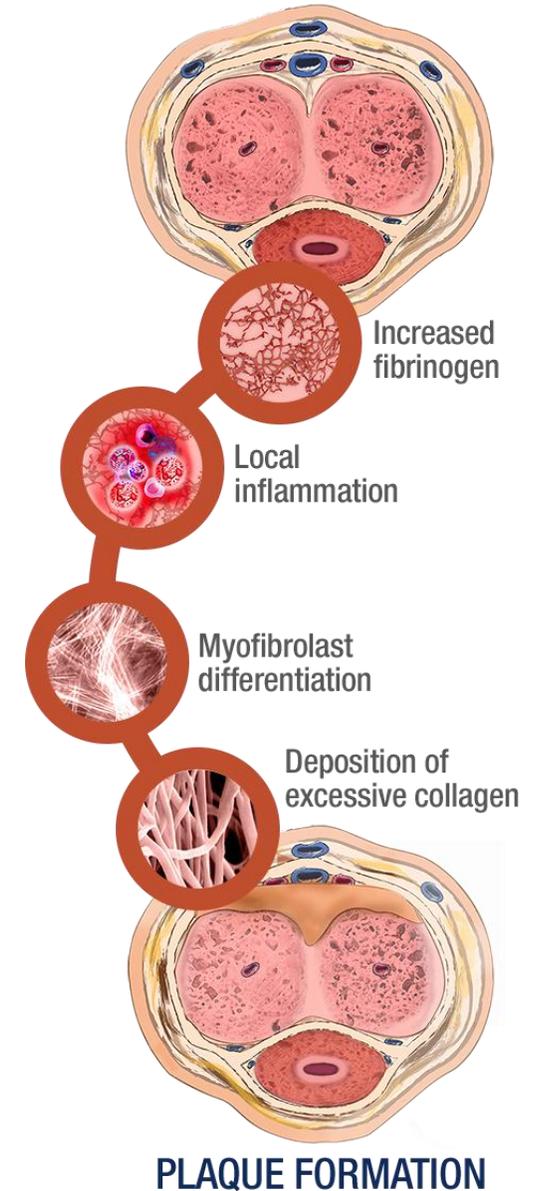
- The diagnosis of Peyronie's disease can be made clinically
- Imaging can be useful when diagnosis is uncertain even after history and physical
- High-resolution ultrasonography is highly sensitive in detecting calcified plaques in the tunica albuginea
- Can also quantify septal and intracavernous fibrosis
- Color duplex is useful in assessing vascular status

Discussion: Other Imaging Modalities

- MR
 - Better at detecting plaques at the penile basis
 - Can provide additional information about inflammatory changes
 - Should be used if concern for malignancy
 - Prior to corrective penile surgery
- X-ray Mammography
 - May show calcifications and the angle of the penis more accurately than US
 - Able to visualize all calcifications within one image
 - Benefits do not necessarily justify radiation exposure

Discussion: Peyronie's Disease

- Pathogenesis
 - Likely multifactorial – genetic predisposition, trauma, tissue ischemia
 - Localized fibrotic plaque in the tunica albuginea resulting in penile deformity, mass, pain and often erectile dysfunction
 - Plaques can be fibrous, contain areas of calcification or be completely ossified



Discussion: Peyronie's Disease

- Risk Factors
 - Family history, other fibromatoses (Duputren's contractures or plantar fibromatosis), repeated genital/perineal injuries
- Clinical Manifestations
 - Curved deformity of the penis
 - Decreased penile length
 - Numbness or pain
 - Erectile dysfunction

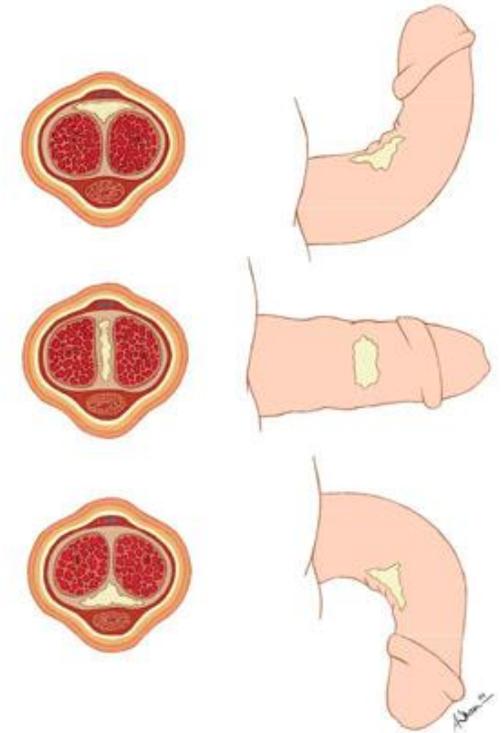


FIGURE 1. Locations of PD plaque. Dorsal midline plaque results in an upward curvature, whereas ventral midline plaque results in a downward curvature. Dorsal and ventral plaques may connect through septal extensions to form an I-beam, causing penile shortening without angulation.

Discussion: Treatment and Management of Peyronie's

- If stable, mild curvature, with satisfactory erectile function, observation is an acceptable option
- Medical management
 - Collagenase - intralesional injections of enzyme that digests collagen
 - Pentoxifylline - PDE inhibitor which inhibits inflammatory proteins that lead to scar formation
- Surgical management
 - Shortening operations
 - Plaque excision or incision with grafting
 - Prosthesis implantation

Wrap Up

- Peyronie's disease is a fibrotic disorder of the tunica albuginea whose pathogenesis is largely unknown
- US with color doppler is the best modality for diagnosis along with history and physical exam
- Medical management includes pentoxifylline or collagenase injections
- Surgery reserved for those refractory to medical management

References

1. Peyronie's Disease Treatment: What is Peyronie's Disease Treatment? Peyronie's Disease Treatment - UCLA. (n.d.). Retrieved August 21, 2019, from <http://urology.ucla.edu/mens-clinic/peyronies-disease-treatment>
2. Peyronie's disease: Diagnosis and medical management - UpToDate. (n.d.). Retrieved August 21, 2019, from https://www.uptodate.com/contents/peyronies-disease-diagnosis-and-medical-management?search=peyronie+disease&source=search_result&selectedTitle=1~43&usage_type=default&display_rank=1#H8
3. Al-Shaiji, T. F., & Brock, G. B. (2009). Peyronie's Disease: Evolving Surgical Management and the Role of Phosphodiesterase 5 Inhibitors. *The Scientific World JOURNAL*, 9, 822–845. <https://doi.org/10.1100/tsw.2009.101>
4. Andresen, R., Wegner, H. E., Miller, K., & Banzer, D. (1998). Imaging modalities in Peyronie's disease. An intrapersonal comparison of ultrasound sonography, X-ray in mammography technique, computerized tomography, and nuclear magnetic resonance in 20 patients. *European Urology*, 34(2), 128–134; discussion 135. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/9693248>
5. Bertolotto, M., Pavlica, P., Serafini, G., Quaia, E., & Zappetti, R. (2009). Painful Penile Induration: Imaging Findings and Management. *RadioGraphics*, 29(2), 477–493. <https://doi.org/10.1148/rg.292085117>
6. DiBenedetti, D. B., Nguyen, D., Zografos, L., Ziemiecki, R., & Zhou, X. (2011). A Population-Based Study of Peyronie's Disease: Prevalence and Treatment Patterns in the United States. *Advances in Urology*, 2011, 1–9. <https://doi.org/10.1155/2011/282503>
7. Hakim, L. S. (2002). Peyronie's disease: an update The role of diagnostics. *International Journal of Impotence Research*, 14(5), 321–323. <https://doi.org/10.1038/sj.ijir.3900871>
8. Hakim, L. S. (2002). Peyronie's disease: an update The role of diagnostics. *International Journal of Impotence Research*, 14(5), 321–323. <https://doi.org/10.1038/sj.ijir.3900871>
9. Hauck, E. W., Diemer, T., Schmelz, H. U., & Weidner, W. (n.d.). Review-Sexual Medicine A Critical Analysis of Nonsurgical Treatment of Peyronie's Disease. <https://doi.org/10.1016/j.eururo.2006.02.059>
10. Pawłowska, E., & Bianek-Bodzak, A. (2011). Imaging modalities and clinical assesment in men affected with Peyronie's disease. *Polish Journal of Radiology*, 76(3), 33–37. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22802839>