

Chapter 9

NON-TRAUMA UROLOGICAL EMERGENCIES IN MEN

Leyla ÖZTÜRK SÖNMEZ¹, Mehmet Giray SÖNMEZ²

Priapism

The term 'priapism' was derived from the large fallus of Priapus known as the god of fertility and desire (Papadopoulos and Kelâmi, 1988). Priapism is a painful erection condition of penis or clitoris lasting more than four hours without sexual desire. Glans and corpus spongiosum do not participate in this period.

Although the incidence is not common in males (0.3-0.9/100.000), it can also be seen in females very rarely (Pryor et al, 2004; Shigehara and Namiki, 2016; *Salonia* et al, 2014). Priapism can be seen in any age group. But bimodal peak distribution can be observed between the ages 5 and 10 among children and 20 and 50 among adults. Although the possible causes of priapism differ according to priapism types, it is observed that they are mostly related to idiopathic causes. Alcohol, medicine, drug use (21%), perineal trauma (12%) and or sickle cell nephropathy (5%) are other possible etiological causes in order (Cherian et al, 2006; Song and Moon, 2013). Priapism is an urgent urological disease which should be managed well since it may cause severe penile function disorder. Our aim in this article is presenting appropriate management of priapism in the light of current literature.

Types Of Priapism: Priapism has three types. These are classified as;

- Ischemic (low-flow) priapism
- Non-ischemic (high-flow) priapism
- Recurrent (stuttering) priapism.

1. Ischemic priapism: It is the most common type (95%) (Shigehara and Namiki, 2016). It is characterized by persistent erection and rigidity of corpus cavernosum (CC). It is characterized by scarcity or lack of flow in CC. Cavernosal blood gas analyses are often characterized by hypoxia, hypercapnia and acidosis. In ischemic priapism, the ultrastructural changes in cavernosal smooth muscle are observed 12 hours later, focal necrosis 24 hours later and finally necrosis and transformation of wide necrosis and fibroblast-like cells are observed 48 hours later (Broderick et al,

¹**PhD, MD**, Department of Physiology, Selcuklu Medical School, Selcuk University, Konya, Turkey, Department of Emergency Medicine, Meram Medical Faculty, Necmettin Erbakan University, Konya, Turkey

²**Assistant Prof.**, Department of Urology, Meram Medical Faculty, Necmettin Erbakan University, Konya, Turkey.

References

- Abrams P, Gaches C, Green N. (1980). Role of suprapubic catheterisation in retention of urine. *J R Soc Med*;73: 845–8.
- Ahluwalia R, Johal N, Kouriefs C, Kooman G, Montgomery B, Plail R. (2006). The surgical risk of suprapubic catheter insertion and long-term sequelae. *Ann R Coll Surg Engl*;88:210–3.
- Ahmed S, Mehta A, Rimington P. (2004). Delayed bowel perforation following suprapubic catheter insertion. *BMC Urol*;4:16–8.
- Am;88(2):495-518.
- AUA Practice Guidelines Committee. AUA guidelines on management of benign prostatic hyperplasia. Chapter 1: Diagnosis and treatment recommendations. *J Urol*. 2003;170(2 pt 1):530-547.
- Baba H, Maezawa Y, Furusawa N, Furusawa N, Kawahara N, Tomita K. (1995). Lumbar spinal stenosis causing intermittent priapism. *Paraplegia*; 33: 338-45.
- Barbosa JA, Tiseo BC, Barayan GA, et al. (2013). Development and initial validation of a scoring system to diagnose testicular torsion in children. *J Urol [Internet]*;189(5):1859–64.
- Berger R, Billups K, Brock G, Broderick GA, Dhabu-wala CB, Goldstein I, et al. (2001). Report of the AFUD Thought Leader Panel for evaluation and treatment of priapism. *Int J Impot Res; (suppl 5)*: 39-43.
- Boniface MP, Mohseni M. (2018). Acute Pain, Scrotum. StatPearls Publishing; 15 January, <https://www.ncbi.nlm.nih.gov/books/NBK470335/>
- Bozkaya H, Oran İ. (2015). Urinary System Drainages. *Trd Sem*; 3: 237-246.
- Bremnor JD, Sadovsky R. (2002). Evaluation of dysuria in adults. *Am Fam Physician*;65(8):1589-1596.
- Broderick GA, Kadioglu A, Bivalacqua TJ, Ghanem H, Nehra A, Shamloul R. (2010) Priapism: pathogenesis, epidemiology, and management. *J Sex Med*;7:476-500.
- Brosnahan J, Jull A, Tracy C. (2004). Types of urethral catheters for management of short-term voiding problems in hospitalised adults. *Cochrane Database Syst Rev*;(1):CD004013.
- Burnett AL, Bivalacqua TJ, Champion HC, Musicki BJ (2006). Feasibility of the Use of Phosphodiesterase Type 5 Inhibitors in a Pharmacologic Prevention Program for Recurrent Priapism. *J Sex Med*;3:1077–1084.
- Burnett AL, Bivalacqua TJ. (2011) Priapism: new concepts in medical and surgical management. *Urol Clin North Am*; 38: 185-94.
- Burnett AL, Pierorazio PM. (2009). Corporal “snake” maneuver: corporaglanular shunt surgical modification for ischemic priapism *J Sex Med*;6:1171–6
- Cherian J, Rao AR, Thwaini A, Kapasi F, Shergill IS, Samman R. (2006) Medical and surgical management of priapism. *Postgrad Med J*; 82:89.
- Choong S, Emberton M. (2000). Acute urinary retention. *BJU Int*;85:186–201.
- Curtis LA, Dolan TS, Cespedes RD. (2001). Acute urinary retention and urinary incontinence. *Emerg Med Clin North Am*;19(3):591-619.
- Çaman Ş, Cici I, Pelin AK, Celayir AC. (2014). An important emergency pathology in the pediatric urology: acute scrotum. *Zeynep Kamil Med Bullet*; 45 (1): 49-53.
- Davenport M. (1996). ABC of general surgery in children. Acute problems of the scrotum. *BMJ*;312:435-7.
- De Stefani S, Savoca G, Ciampalini S, Stener S, Gattuccio I, Belgrano. E. (2001). Urethrocutaneous fistula as a severe complication of treatment for priapism. *BJU Int*;88:642-643.
- Deane AM, Worth PH. (1985). Female chronic urinary retention. *Br J Urol.*; 57(1):24-26.
- Dorflinger A, Monga A. (2001). Voiding dysfunction. *Curr Opin Obstet Gynecol*;13(5):507-512.
- Drake MJ, Nixon PM, Crew JP. (1998). Drug-induced bladder and urinary disorders. Incidence, prevention and management. *Drug Saf*;19(1):45-55.
- Ebbehøj J. (1974). A new operation for priapism. *Scand J Plast Reconstr Surg*;8:241-242.
- Ellerkmann RM, McBride A. (2003). Management of obstructive voiding dysfunction. *Drugs Today (Barc)*;39(7):515.
- Ellerkmann RM, McBride A. (2003). Management of obstructive voiding dysfunction. *Drugs Today (Barc)*;39(7):513-540.
- Emberton M, Cornel E, Bassi P, Fourcade O, Gómez M, Castro R. (2008). Benign prostatic hyperplasia as a progressive disease: a guide to the risk factors and options for medical management. *Int J Clin Pract*;62:1076–86.
- Emberton M, Fitzpatrick J. (2008). The Reten-World survey of the management of acute urinary retention: preliminary results. *BJU Int*;101(Suppl 3):27–32.
- Ficarra V, Beltrami P, Sarti A, Rubilotta E, Righetti R, Malossini G. (2001). High flow priapism due to a bilateral arteriosinusoidal fistula. *Scand J Urol Nephrol*; 35: 418-9.

- Fitzpatrick J, Kirby R. (2006). Management of acute urinary retention. *BJU Int*;97(Suppl 2):16-20.
- Fitzpatrick J, Kirby R. (2006). Management of acute urinary retention. *BJU Int. Apr*;97 Suppl 2:16-20.
- Fowler JE, Koshy M, Strub M, Chinn SK. (1991). Priapism associated with sickle cell hemoglobinopathies: Prevalence, natural history and sequelae. *J Urol*; 145: 65-8.
- Gordon SA, Stage KH, Tansey KE, Lotan Y. (2005). Conservative management of priapism in acute spinal cord injury. *Urology*;65: 1195-7.
- Goyal NK, Goel A, Sankhwar SN. (2012). Safe percutaneous suprapubic catheterisation. *Ann R Coll Surg Engl*; 94: 597-600.
- Grayhack JT, McCullough W, O'Coner VJ Jr, Trippel O. (1964). Venous bypass to control priapism. *Invest Urol*;1:509-513.
- Horgan A, Prasad B, Waldron D, O'Sullivan D. (1992). Acute urinary retention. Comparison of suprapubic and urethral catheterisation. *Br J Urol*;70:149-51.
- Huang YC, Harraz AM, Shindel AW, Lue TF. (2009). Evaluation and management of priapism: *Nat Rev Urol* 2009; 6: 262-71.
- Ichsan J, Hunt D. (1987). Suprapubic catheters: a comparison of suprapubic versus urethral catheters in the treatment of acute urinary retention. *Aust N Z J Surg*;57: 33-6.
- Ilkay AK, Levine LA. (1995). Conservative management of high-flow priapism. *Urology*; 46: 419-2.
- Johansson RM, Malmvall BE, Andersson-Gäre B, Larsson B, Erlandsson I, Sund-Levander M, Rensfelt G, Mölstad S, Christensson L. (2013). Guidelines for preventing urinary retention and bladder damage during hospital care. *J Clin Nurs. Feb*;22(3-4):347-55. doi: 10.1111/j.1365-2702.2012.04229.x. Epub 2012 Aug 30.
- Kadioğlu A, Şanlı Ö, Ersay A, Çakan M, Taşkapu HH, Akman T. (2006). Practical Management of Patients with Priapism EAU-EBU update series 4; 150-160
- Kalejaiye O, Speakman MJ. (2009). Management of Acute and Chronic Retention in Men. *European Urology supplements*;8: 523-529
- Kandel GL, Bender LI, Grove JS. (1968). Pulmonary embolism: a complication of corpus-saphenous shunt for priapism. *J Urol*;99:196-197.
- Kaplan S, Wein A, Staskin R, Roehrborn C, Steers W. (2008). Urinary retention and post void residual urine in men: separating truth from tradition. *J Urol*;180:47-54.
- Kilinc, M. (2009). Temporary cavernosal-cephalic vein shunt in low-flow priapism treatment. *Eur Urol. Sep*;56(3):559-62. doi: 10.1016/j.eururo.2008.10.009. Epub 2008 Oct 14.
- Kim JS, Shin YS, Park JK. (2018). Clinical features of acute scrotum in childhood and adolescence: Based on 17 years experiences in primary care clinic. *American Journal of Emergency Medicine July*; 3(7): 1302-1303
- Kulmala RV, Lehtonen TA, Tammela TL. (1995). Priapism, its incidence and seasonal distribution in Finland. *Scand J Urol Nephrol*;29: 93-6.
- Kulmala RV, Tamella TL. (1995) Effects of priapism lasting 24 hours or longer caused by intracavernosal injection of vasoactive drugs. *Int J Impot Res*; 7: 131-6.
- Kumar P, Minhas S, Brown C, Muneer A, et al. (2005). Ischemic priapism: Acute implant insertion and long-term follow-up. *AUA annual meeting, abstrn no*: 1271.
- Levey HR, Kutlu O, Bivalacqua TJ (2012). Medical management of ischemic stuttering priapism: a contemporary review of the literature. *Asian J Androl*;14:156-63.
- Lewis AG, Bukowski TP, Jarvis PD, Wacksman J, Sheldon CA. (1995). Evaluation of acute scrotum in the emergency department. *J Pediatr Surg*;30:277-82.
- Lian W, Lv J, Cui W, Jin Z, Liu T, Li W, Yuan Y, Xin Z. (2010). Al-Ghorab Shunt plus intracavernous tunneling for prolonged ischemic priapism. *J Androl. Sep-Oct*;31(5):466-71. Epub 2010 May 13.
- McConaghy JR, Panchal B. (2016). Epididymitis: An Overview. *American Family Physicia*;94(9):723-726.
- McMahon CG. (2002). High flow priapism due to an arterial-lacunar fistula complicating initial veno-occlusive priapism. *Int J Impot Res*; 14: 195-6.
- Monga M, Broderick GA, Hellstrom WA. (1996) Priapism in sickle cell disease: The case for early implantation of the penile prosthesis. *Eur Urol*; 30: 54-9.
- Montague DK, Jarow J, Broderick GA, Dmochowski RR, Heaton JP, Lue TF, et al. (2003). American Urological Association Guideline on the management of priapism. *J Urol*; 170: 1318-24.
- Nyman MA, Schwenk NM, Silverstein MD. (1997). Management of urinary retention: rapid versus gradual decompression and risk of complications. *Mayo Clin Proc*;72(10):951-956.
- Papadopoulos I, Kelâmi A. (1988). Priapus and priapism. From mythology to medicine. *Urology*; 32:385.

- Paydar-Darian N, Cilento BG Jr, Lee LK. (2017). Prospective Validation of a Clinical Score for Males Presenting with an Acute Scrotum. *Acad Emerg Med*. Dec;24(12):1474-1482. doi: 10.1111/acem.13295. Epub 2017 Oct 16.
- Perimenis P, Athanasopoulos A, Papathanasopoulos P, Barbalias G. (2004). Gabapentin in the management of the recurrent, refractory, idiopathic priapism. *Int J Impot Res*; 16: 84-5.
- Pogorelic Z, Mustapic K, Jukic M, et al. (2016). Management of acute scrotum in children: a 25-year single center experience on 558 pediatric patients. *Can J Urol*;23(6):8594-601.
- Powell BL, Craig JB, Muss HB. (1985). Secondary malignancies of the penis and epididymis: A case report and the review of the literature. *J Clin Oncol*; 3: 110-5.
- Pryor J, Akkus E, Alter G, Jordan G, Lebret T, Levine L et al. (2004) Priapism. *J Sex Med*; 1: 116-20.
- Quackels R. (1964). Treatment of a case of priapism by cavernospongious anastomosis [in French]. *Acta Urol Belg*;32:5-13.
- Rachid-Filho D, Cavalcanti AG, Favorito LA, Costa WS, Sampaio FJ. (2009). Treatment of recurrent priapism in sickle cell anemia with finasteride: a new approach. *Urology*. Nov;74(5):1054-7. doi: 10.1016/j.urology.2009.04.071. Epub 2009 Jul 17.
- Rees RW, Kalsi J, Minhas S, Peters J, Kell P, Ralph DJ. (2002). The management of low-flow priapism with the immediate insertion of a penile prosthesis. *BJU Int*; 90: 893-7.
- Rogers ZR. (2005). Priapism in sickle cell disease. *Hematol Oncol Clin North Am*;19: 917-28.
- Rosenstein D, McAninch JW. (2004). Urologic emergencies. *Med Clin North*
- Rutchik S, Sorbera T, Rayford RW, Sullivan J. (2001). Successful treatment of recalcitrant priapism using intercorporeal injection of tissue plasminogen activator. *J Urol*; 166:628.
- Salonia A, Eardley I, Giuliano F, Hatzichristou D, Moncada I, Vardi Y et al. (2014) *European Association of Urology guidelines on priapism*. *Eur Urol*;65:480-9.
- Scorer C. (1953). The suprapubic catheter. A method of treating urinary retention. *Lancet*;265:1222-5.
- Selius BA, Subedi R. (2008). Urinary retention in adults: diagnosis and initial management. *American Family Physician*;77(5):643-650.
- Selius BA, Subedi R. (2008). *Urinary Retention in Adults: Diagnosis and Initial Management*. *Am Fam Physician*. Mar 1;77(5):643-650.
- Shergill I, Shaikh T, Arya M, Junaid I. (2008). A training model for suprapubic catheter insertion: the uroEmerge suprapubic catheter model. *Urology*;72:196-7.
- Shigehara K, Namiki M. (2016) Clinical Management of Priapism: A Review. *World J Mens Health*; April 34(1): 1-8. <http://dx.doi.org/10.5534/wjmh.2016.34.1.1>
- Song PH, Moon KH. (2013). Priapism: current updates in clinical management. *Korean J Urol*;54:816-23.
- Teloken C, Ribeiro EP, Chammas M, Teloken P, Souto CAV. (2005). Intrakavernozal etilefrine self-injection therapy for recurrent priapism: one decade of follow-up. *Urology*;65: 1002.
- Turunc T. (2012). *Acute Scrotum in Children*. *Pediatric Emergency Medicine Book*. Istanbul Medical Publishing; p.2109-2113.
- Urinary Retention. National Kidney and Urologic Diseases Information*. Link: <https://www.niddk.nih.gov/health-information/urologic-diseases/urinary-retention>
- Winter CC. (1976). Cure of idiopathic priapism: new procedure for creating fistula between glans penis and corpora cavernosa. *Urology*;8:389-391
- Witt MA, Goldstein I, Saenz de Tejada I, Greenfield A, Krane R. (1990) Traumatic laceration of intrakavernozal arteries: The pathophysiology of nonischemic, high flow, arterial priapism. *J Urol*;143: 129-32.
- Wright S, Hoffmann B. (2015). Emergency ultrasound of acute scrotal pain. *Eur J Emerg Med*;22(1): 2-9
- Yang C Jr, Song B, Liu X, Wei GH, Lin T, He DW. (2011). Acute scrotum in children: an 18-year retrospective study. *Pediatr Emerg Care*;27:270-4.
- Zorludemir U. (2010). Inguino-scrotal pathologies. *Turk Arch Ped*; 45 Suppl: 23-8.