

CASE REPORT

A Giant Urethral Stone With Urethrocutaneous Fistula: A Case Report

Haznur Ikhwan¹, Aril Rizaldi²

¹Department of Emergency, Binjai Regional Army Hospital

²Department of Urology, Faculty of Medicine, Universitas Muhammadiyah Sumatera Utara

Email: haznurikhwan1996@gmail.com

Abstract: Urethral stones are commonly associated with urinary tract calculi and underlying diverticulum or stricture urethra. Urethral calculus represent less than 1% of all urinary stones diseases. Giant urethral calculi frequently may occur in male and rarely in female. This purpose of reporting this case is to describe a way to diagnose urethral stone cases and so that patients can be treated by urologists.

CASE PRESENTATION: A 48-year-old man patient with a giant urethral stone with urethrocutaneous fistula for the past 1 year and a diventral penile meatotomy was performed. With physical examination found on the penis palpable stone +/- 4cm anterior to the penis, the tip of the stone can be seen from Eksternum Urethra Orifice. There was also a urethrocutaneous fistula on the ventral penis, about a stone, measuring +/- 0.1 cm so a diventral penis meatotomy was performed, a stone measuring 4x1 cm was found, with unhealthy tissue in the urethra along the stone.

DISCUSSION: The incidence of penile urethral stones is increasing which may due to various factors especially climate change and genetic factors. The gradual formation of this long penile urethral stone could take approximately around 5-10 years which indicates the patient's persistent ignorance of pain and discomfort in the urinary tract. In our case, 3 months after the first operation, urethrocutaneous fistula repair was performed. Evaluation after 2 months after fistula repair, Urination is smooth, no pain, good wound, no fistula, was performed in our report.

CONCLUSION: From our experience some predisposing factors of urethral stone with a Urethrocutaneous fistula. The complications seriously affect the quality of life and even cause more serious consequences, so physicians and patients should be aware.

Keywords: giant urethral stone, urethrocutaneous fistula, meatotomi ventral penis

INTRODUCTION

Lower urinary tract calculi are observed in the bladder, prostate, and urethra. The urethra is an infrequent location, accounting for no more than 0.3% of urinary calculi disease cases.¹ Approximately 88% of urethral stones are localized to the posterior urethra.² The frequency of urethral stones varies with geographical location: in Western countries this disease is diagnosed only occasionally, whereas it is endemic in the Middle East and Asia.¹ In developing countries, urethral calculi typically consist of struvite and uric acid, whereas in industrialized societies calcium oxalate, and cystine are dominant.²

Two peaks of incidence have been reported for urethral calculi: the first occurs in early childhood, but recently the number of pediatric urolithiasis cases has decreased [1-3]; the second peak is in approximately the fourth decade of life.¹ The infrequency of urethral calculi in the second and third decades of life is potentially caused by higher urinary peak flow rates in this age range.⁴ The flow rate for this group reaches 35

ml/s and decreases to 15 ml/s in the fourth decade of life. The relatively longer urethral length in males at those ages is the reason that urethral stones are more commonly reported in that age group as compared with younger males.⁵ Stones in the urethra are usually small in size; however, very large stones are occasionally diagnosed that present a challenge for the treatment process.

CASE REPORT

Here we present a 48 year old male patient with a giant urethral stone with urethrocutaneous fistula for the past 1 year and a diventral penile meatotomy was performed [

Figure 1.]



Figure 1. Clinical Finding

With physical examination found on the penis palpable stone +/- 4cm anterior to the penis, the tip of the

stone can be seen from Eksternum Urethra Orifice. There was also a urethrocutaneous fistula on the ventral penis, about a stone, measuring +/- 0.1 cm so a ventral penis meatotomy was performed, a stone measuring 4x1 cm was found, with unhealthy tissue in the urethra along the stone. 3 months after the first operation, urethrocutaneous fistula repair was performed. Evaluation after 2 months after fistula repair, Urination is smooth, pain (-), good wound, fistula(-), was performed in our report. [Figure2. and Figure 3.]



Figure 2: X-ray examination of the pelvis showing a calcareous large shadow in the view of the urethra suggestive of a stone



Figure 3: The calculi removed from the urethra.

DISCUSSION

Giant penile urethral stones are rarely diagnosed. In the literature, a limited number of cases have been described, which typically led to clinical dilemmas. In most of those situations, typical minimally invasive endoscopic treatment, such as forceps or basket extraction or endoscopic push-back with lithotripsy, is not possible. In general, open surgery is recommended, but some exceptions have been described. Demir et al. successfully treated a patient with a stone in the prostatic urethra measuring 65x70x60 mm by endoscopic procedures such as laser and pneumatic lithotripter.⁵

The complications associated with endoscopic surgery, injuries may vary from simple abrasions to false

passages. It is necessary to carefully perform the extraction of larger stones or fragments of stones, as to ensure the compliance of the lumen in order to avoid tearing or avulsion of the urethral wall. In addition, the endoscopic treatment may also generate a urethral stricture.

In our case, for physical examination found on the penis palpable stone +/- 4cm anterior to the penis, the tip of the stone can be seen from Eksternum Urethra Orifice. There was also a urethrocutaneous fistula on the ventral penis, about a stone, measuring +/- 0.1 cm so a in ventral penis meatotomy was performed, a stone measuring 4x1 cm was found, with unhealthy tissue in the urethra along the stone.

Thereby, complete urinary tract reconstruction was obtained. A similar technique was used by Lubana et al., who described a case of a giant urethral stone removed by urethrotomy.⁶ A study reported a dumbbell-shaped vesico-prostatic urethral stone measuring 102x35x45 mm that was removed by an open transvesical approach.⁷ Another

problem in stone removal is giant stone occurrence in the diverticulum, where open surgery with incision of the diverticulum is usually required.^{8,9}

In other case, a stone of 10.5x3 cm long with 36.2 gram was removed under careful exploration, a silicon Foley's catheter was indwelled and was removed at three weeks, was no reflux, and patient was passing urine without any difficult at six months of follow up.^{10,11} However, an exception for this situation has been also reported: Susco et al. described a female patient with giant stone localized to a urethral diverticulum treated successfully by litholapaxy.^{12,13}

After the removal calculus, the patient followed the doctors' advice to massage the urethral diverticulum site after each urination by squeezing out the residual urine in the diverticular cavity.¹⁴ To prevent post operative complications, the patient first underwent suprapubic puncture cystostomy and was given prophylactic antibiotics.¹⁵

The shorter length of the female urethra affords easier access to stones in women. Giant urethral stones are not observed only in adult patients. In a very unusual case reported by Rivilla et al., a 6-year-old girl presented with a urethral stone 58x25x21 mm in size. In this immature patient, a suprapubic approach with a small bladder incision was chosen.¹⁶

The incidence of penile urethral stones is increasing which may due to various factors especially climate change and genetic factors. The gradual formation of this long penile urethral stone could take approximately around 5-10 years which indicates the patient's persistent ignorance of pain and discomfort in the urinary tract.^{17,18}

In our case, 3 months after the first operation, urethrocutaneous fistula repair was performed. Evaluation after 2 months after fistula repair, Urination is smooth, pain (-), good wound, fistula (-), was performed in our report.

This possibility should be taken into account in the early phase of diagnosis and further in the treatment planning process.

CONCLUSION

Giant urethral stones are atypical situations that frequently coexist with other pathology of the urinary tract.

From our experience some predisposing factors of urethral stone with a Urethrocutaneous fistula. The complications seriously affect the quality of life and even cause more serious consequences, so clinicians and patients should be aware.

REFERENCES

1. Verit A, Savas M, Ciftci H, Unal D, Yeni E, Kaya M. Outcomes of urethral calculi patients in an endemic region and an undiagnosed primary fossa navicularis calculus. *Urol Res.* 2016;34:37-40
2. Kamal B.A., Anikwe R.M., Darawani H., Hashish M., Taha S.A., Urethral calculi:

- presentation and management, BJU Int., 2018, 93, 549-552
3. Aegukkatajit S., Reduction of urinary stone in children from north-eastern Thailand, J Med Assoc Thai., 2019, 82, 1230-1233
 4. Jorgensen J.B., Jensen K.M., Uroflowmetry, Urol Clin North Am., 2016, 23, 237-242
 5. Demir O., Kefi A., Cahangirov A., Cihan A., Obuz F., Esen A.A., et al., The giant calculus within the prostatic urethra, Urol Res., 2017, 39, 319-321
 6. Lubana P., Singh O., Gupta S., Odiya S., Mathur R., A Rare Case Of A Giant Urethral Calculus, Int J Surg., 2017, <https://ispub.com/IJS/14/2/3117>
 7. Prabhuswamy V.K., Tiwari R., Krishnamoorthy R., A giant dumbbell shaped vesico-prostatic urethral calculus: a case report and review of literature, Case Rep Urol., 2018, 167635, 5
 8. Gavleatte P., Multescu R., Georgesu D., Geavlete B., Endoscopic diagnosis and treatment in urethral pathology, San Diego Academica Press., 2016
 9. Kaczmarek K., Golab A., Soczawa M., Slojewski M., Urethral stone of unexpected size: case report and short literature review, De Gruyter Open., 2016, 11(1), 7-10
 10. Vinit KS., Althaf K., Krishnan S., Mujeeburahiman M., Manzoor MAP., Unusual giant penile urethral calculus, Indian Journal of Surgery., 2019
 11. Maheshwari PN., Shah HN., In-situ holmium laser lithotripsy for impacted urethral calculi, J Endourol, 2005, 19(8), 1009-11
 12. Ramzan A., Akram A., Saif S., Jamshed F., Khalid N., Giant urethral stone with diverticulum: a case report, J Univ Med Dent Coll., 2021, 12(4), 290-292
 13. Susco B.M., Perlmutter A.E., Zaslau S., Kandzari S.J., Female urethral diverticulum containing a calculus: a case report, W VMed J., 2018, 104, 15-16
 14. Maokun S., Wanting X., Shuai G., Wenyi M., Haiyue X., Ruili S., Giant urethral calculus in

- anterior urethral diverticulum: a case report, *BMC Urology*, 2019
15. Chen S., Su X., Jiang M., Mi H., Giant anterior urethra stones combined with a diverticulum: a case report, *Royal College of Surgeons.*, 2019
16. Rivilla F., Luis A., Llanos D., Ruiz A., Giant urethral calculus in a 6-year-old girl, *J Pediatr Urol.*, 2018, 4, 469-471
17. Manzoor MAP., Mujeeburahiman M, Rekha P-D, Electron probe microanalysis reveals the complexity of mineral deposition mechanisms I urinary stones, *Urolithiasis*, 2019, 47(2),137-148
18. Aditya PS., Mukesh G., Kapil C., Urethral diverticulum with giant calculus; an unusual cause of prolonged lower urinary tract symptoms, *International Urogynecology Journal.*, 2020