

CASE REPORT

Urinary retention secondary to acute vasculitic penile swelling in a pediatric patient

Nicholas Farkas, John Black & Ashish Gupta

Epsom and St Helier University Hospitals NHS Trust, Wrythe Lane, Carshalton, Surrey SM5 1AA, UK

Correspondence

Nicholas Farkas, Epsom and St Helier University Hospitals NHS Trust, Wrythe Lane, Carshalton, Surrey, SM5 1AA, UK. Tel: +44020 8296 2000; Fax: +4402086418641; E-mail: nickfarkas@doctors.org.uk

Funding Information

No sources of funding were declared for this study.

Received: 24 July 2015; Revised: 31 October 2015; Accepted: 18 December 2015

Clinical Case Reports 2016; 4(3): 258–260

doi: 10.1002/ccr3.496

Background

Henoch–Schönlein purpura (HSP) is a small-vessel systemic vasculitis, seen commonly throughout childhood with peak prevalence between 4 and 6 years. With a prevalence of approximately 1/5000, the disease presents most often in winter months and is commonly preceded by upper respiratory tract infections. It is a multisystem disease, most commonly resulting in a self-limiting, IgA-mediated cutaneous purpuric eruption [1]. It can have graver consequences including glomerulonephritis and intussusception.

Penile involvement in association with HSP is rare, but has been documented previously in both children and adults. The penis is an end-arterial structure, consisting of complex vascular architecture. Given the pathophysiology of HSP, male genitalia are particularly susceptible to the microemboli associated with this disorder. This can lead to acute penile swelling which in this case culminated in acute urinary retention.

There have been no documented cases of acute urinary retention secondary to penile swelling caused by HSP, neither has the insertion of SPC been acknowledged in the management of this presentation.

Given the rarity, patient's age and management strategy, this case highlights an unusual, but important

Key Clinical Message

Acute urinary retention secondary to vasculitic penile swelling in children is extremely rare. Henoch–Schönlein purpura is a self-limiting IgA-mediated cutaneous vasculitis, which can cause soft tissue edema. Acute urinary retention requires urgent intervention to prevent obstructive uropathy. Suprapubic catheterization provides an effective management strategy in the emergency setting.

Keywords

Emergency, pediatrics, suprapubic catheter, urinary retention, urology, vasculitis.

presentation demonstrating the management of a distressed child in acute urinary retention. While suprapubic catheterization is not without complication, the management and outcome highlighted in this case report offers a



Figure 1. Edematous penis with vasculitic rash.



Figure 2. Vasculitic rash on upper arm.



Figure 3. Vasculitic rash on abdomen.

practical and effective intervention in the acute setting, where urethral catheterization was deemed too high risk.

Case Presentation

An 11-year-old boy was brought into pediatric accident and emergency department at a district general hospital. He reported acute penile pain with associated suprapubic discomfort.

The patient had presented to the same pediatric accident and emergency department 1 week prior to the acute

admission, complaining of mildly swollen, tender testicles with an edematous scrotum. A 2-week preceding history of self-limiting coryzal symptoms was reported which was attributed to viral illness of upper respiratory tract. He then developed a diffuse rash consisting of well-circumscribed violaceous purpura and petechiae over the trunk, arms and later the buttocks.

The patient was discharged home with conservative measures, only to represent 24 h later with a striking progression of the rash, which was nonblanching and vasculitic in character. He described further swelling in the genital region and a complete inability to void. The rash was particularly marked over the trunk and back with involvement of the limbs. The patient remained systemically well. There were no focal neurological deficits. On direct questioning there was no associated hematuria with either admission.

On examination, the penis was noted to be acutely swollen with an irreducible foreskin. A purpuric rash was noted over the dorsal aspect of the penile shaft (Figs. 1–3). The patient presented with signs consistent of urinary retention and appeared agitated secondary to the inability to pass urine. A bladder scan demonstrated 350 mL. Urinalysis was unable to be performed. Blood tests results were as follows: White Blood Cells $8.3 \times 10^9/L$ ($3.5\text{--}10.0 \times 10^9/L$), Hemoglobin 121 g/L ($(\text{mol/L}) 130\text{--}170$ (F) $115\text{--}145$ g/L), Neutrophils $5.1 \times 10^9/L$ ($1.7\text{--}7.5 \times 10^9/L$), CRP 6.3 mg/L ($0\text{--}10$ mg/dL), Sodium 138 mmol/L ($135\text{--}145$ mmol/L), Potassium 4.9 mmol/L ($3.5\text{--}5.0$ mmol/L), Urea 4.5 mmol/L ($2.5\text{--}6.7$ mmol/L), Creatinine 44 $\mu\text{mol/L}$ ($70\text{--}150$ $\mu\text{mol/L}$), Bilirubin 4 $\mu\text{mol/L}$ ($3\text{--}17$ $\mu\text{mol/L}$), Alanine Transaminase 19 μL ($0\text{--}30$ μL), Alkaline Phosphatase 123 μL ($50\text{--}160$ μL).

Following discussion with the consultant urologist, urethral catheterization was deemed an unsafe procedure, due to the relative high risk of urethral injury in the context of HSP and penile edema. Emergency referral to a tertiary pediatric surgery unit was arranged. Prior to transfer the urologist advised osmotic irrigation with glucose solution. This was unsuccessful in decreasing the penile edema.

On arrival at the tertiary center, a SPC was inserted under general anesthetic in theater with 900 mL of urine drained. Urine dipstick post-SPC demonstrated +1 blood and +1 protein. A stat dose of intravenous gentamicin prescribed. Following insertion of the catheter the penile swelling improved but did not subside completely. Simple analgesia was administered in the post-operative period which provided sufficient symptomatic relief.

The patient was discharged home later that day with the SPC in-situ. Follow-up was arranged 7 days postoperatively for trial without catheter and review of penile

edema. The patient was subsequently discharged following removal of SPC and resolution of swelling. No further complications were reported. Daily urinalysis post removal of catheter initially revealed protein +1 in urine but after 7 days this had resolved. Follow-up bloods at 7 days demonstrated renal function, urea and electrolytes, liver and bone profile, full blood count all within normal parameters.

Past medical history was unremarkable and the child had reached all expected developmental milestones. No regular medications were being taken and no known drug allergies.

Differential Diagnosis

- Balanitis
- Phimosis
- Bladder Calculus
- Clot Retention
- Acute urinary retention secondary to paraphimosis

Discussion

There are no previously reported cases of penile swelling and acute urinary retention associated with HSP. Cases of HSP with penile involvement in children are documented though very rare.

Pennesi [2] reports the case of a 4.9-year-old boy presenting with a 'fire red' penis which responded well to steroid therapy. Caliskan et al. [3] report the case of a 2-year-old boy presenting with irreducible preputium hyperemia and edema of the whole penis. An initial diagnosis of balanoposthitis was made, however, following conservative management with warm water the penile hyperemia and edema developed into nontender red purpuric lesion. David et al. [4] describe the case of a 4.6-year-old boy with extensive HSP involvement of the glans penis, but no compromise noted when urinating. A recent systemic literature review detailing 35 cases of HSP with ureteral and vesical involvement was carried out by Siegenthaler et al. [5]. The paper highlighted 30 cases of ureteral involvement, four cases of vesical and one with both ureteral and vesical involvement, concluding that patients with vesical associa-

tion were managed conservatively. Ureteral involvement often required surgical intervention.

This case offers an effective intervention to address a rare presentation with potentially serious sequelae. SPC is feasible and effective in the pediatric patient with acute urinary retention in the context of HSP.

Learning Points

- Acute urinary retention secondary to penile swelling in children caused by HSP is extremely rare.
- HSP is a self-limiting IgA-mediated cutaneous purpuric vasculitis, which can cause soft tissue edema.
- Urgent intervention is required to manage acute urinary retention and prevent obstructive uropathy.
- SPC provides an effective management strategy in the acute setting.
- SPC is associated with risks; bleeding, infection, perforation, neurovascular damage.

Conflict of Interest

None declared.

References

1. Ozen, S., N. Ruperto, M. J. Dillon, A. Bagga, K. Barron, et al. 2006. EULAR/PRES endorsed consensus criteria for the classification of childhood vasculitides. *Ann. Rheum. Dis.* 65:936–941.
2. Pennesi, M., E. Biasotto, and A. Saccari. 2006. Schönlein-Henoch purpura involving the penis. *Arch. Dis. Child.* 91:603. doi:10.1136/adc.2005.072652.
3. Caliskan, B., A. Guven, C. Atabek, F. Gok, S. Demirbag, and I. Surer. 2009. Henoch-Schönlein purpura presenting with symptoms mimicking balanoposthitis. *Pediatr. Rep.* 1: e5. doi:10.4081/pr.2009.e5.
4. David, S., J. D. Schiff, and D. P. Poppas. 2003. Henoch-Schönlein involving the glans penis. *Urology* 61:1035–1036.
5. Siegenthaler, G. M., M. Rizzi, A. Bettinelli, G. D. Simonetti, A. Ferrarini, and M. G. Bianchetti. 2014. Ureteral or vesical involvement in Henoch-Schönlein syndrome: a systematic review of the literature. *Pediatr. Nephrol.* 29:235–239. doi:10.1007/s00467-013-2621-6.