Auto-Digestion of Penis after Ring Block with Xylocaine & Adrenaline: A Lethal Iatrogenic Trauma

Mahakshit Bhat*, Amilal Bhat, Ram Kishan Saran, Karamveer Sabharwal and Manish Singla

Department of Urology and PSM, S.P. Medical College Bikaner 334003, India

Abstract: A 10 years old insulin dependent diabetic male child presented with gradual blackening of penis and ketoacidosis after incision and drainage of abscess at penile shaft under penile ring block with xylocaine with adrenaline. Patient was managed for diabetes, debridement and SPC was done but process of gangrene continued; finally whole penis slough out. Perineal urethrostomy was done and patient was advised for penile reconstruction later on.

Keywords: Injury, Infection, Diabetes, Penis, Amputation.

INTRODUCTION

Minor redness / soreness of the tip of the foreskin are very common. More severe inflammation of the glans penis, foreskin and penile shaft affecting around 6% of uncircumcised and 3% of circumcised males is often due to infection by Streptococci (including Group A), staphylococci, and gram negative organism and yeast infection is also common in diabetic [1]. Only few cases of penile amputation are reported till date and most of them involving a part of the penis. The causes leading to amputation are complication of circumcision, untreated paraphimosis, Fournier's gangrene, strangulation caused by human hair at coronal sulcus, carcinoma penis, tourniquet effect created by condom appliances, thrombo-embolic phenomena and donovanosis. HIV infection and thrombotic complication associated with ulcerative colitis, self strangulation of penis by objects -most of these patients may have psychiatric disease [2, 3]. No such case of auto amputation of penis after penile ring block is reported in literature.

CASE HISTORY

A 10-year-old diabetic male child of poor socioeconomic background presented with blackening of penile shaft and decreased urine output of two days duration. On detailed interrogation he gave history of fever, cold and blister on penile shaft of 5 days duration which converted into abscess in due course of time and had undergoing incision and drainage of the abscess under xylocaine with adrenaline penile ring block at rural health centre. Patient was toxic, malnourished, dehydrated and had tachypnea, tachycardia and wet gangrene of whole penile shaft and scrotum was edematous on examination (Figure **1**). Haemogram revealed anaemia and leucocytosis (Hemoglobin 8.9gm%, Total Leukocyte Count 14300/ml) and other investigations were random blood sugar 386mg/dl, blood urea 26.5mg/dl, Serum creatinine 0.91mg/dl, Urine-sugar (+++) albumin nil and ketone bodies (+++). Patient was managed conservatively with intravenous fluids, third generation cephalosporines and amino glycosides, insulin, and tetanus toxoid. Debridement and suprapubic cystostomy done when general conditions improved but gangrenous process was continued and whole penis slough out within few days. Perineal urethrostomy was done after 6 weeks to make the patient tube free and advised penile reconstruction later on. Patient is maintaining perineal urethrostomy (Figure **2**) and well voiding well, urine culture is sterile and refused for penile reconstruction in follow up at 18 months.

DISCUSSION

Ischaemic necrosis of penis is uncommon as penis is highly vascular organ with dual blood supply from corporal artery and dorsal penile arteries. Penile strangulation leading to penile necrosis has been reported [2]. Penile strangulation may be mechanical or chemical. Though penis has plentiful arterial supply chemical strangulation may occur if any drug or chemical causes severe and persistent vasospasm. Mild ischaemic injury (numbness, pallor and coldness) after ring block by xylocaine with adrenaline has been reported [4]. But in cases of malnourished and uncontrolled diabetics with infection may cause severe ischaemic insult. Sub-clinical atherosclerosis and lipoprotein oxidation have been reported in type 1 diabetes at an early age (mean age 11 ± 2 years) [5]. Fatal out come in present cases seems to be poor resistance due to malnourishment, uncontrolled diabetes and local infection which flared up with

*Address corresponding to this author at the Department of Urology, S.P. Medical College Bikaner, C-15 Sadul Ganj Bikaner 334003, India; Tel: 911512226327; Fax: 911512226301; E-mail: amilalbhat@rediffmail.com

Figure 1: Showing Blackening of penis and part of scrotum with appearing line of demarcation of gangrene.

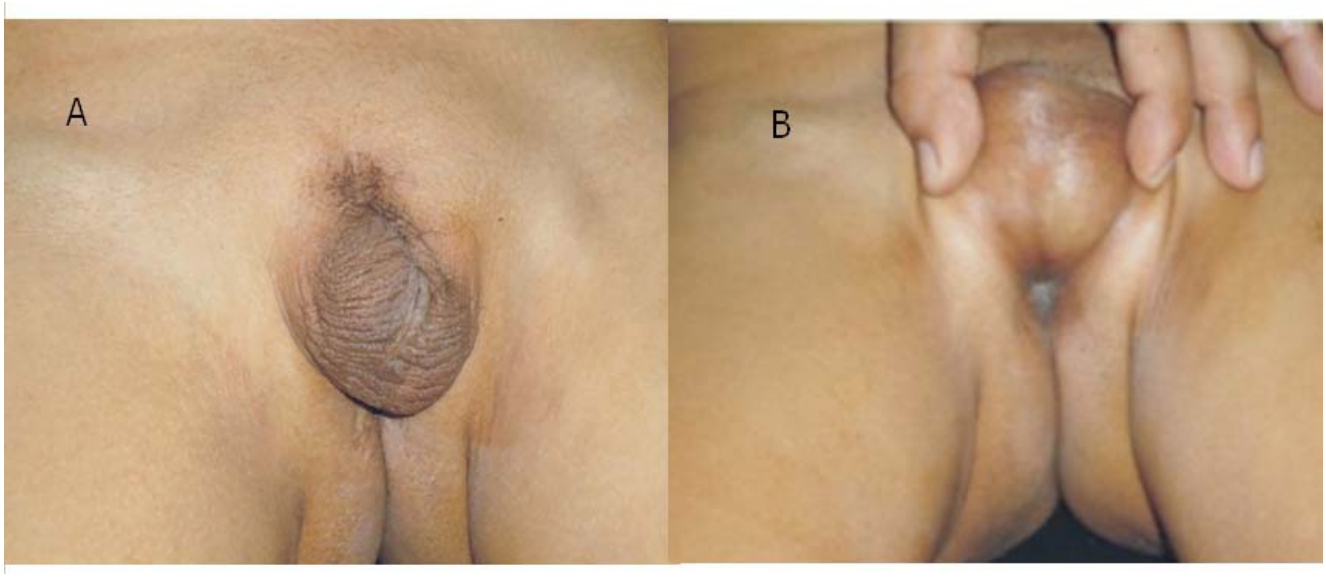

Figure 2: A. Showing Healed Scar of Auto amputated penis. **B**. Showing Perineal urethrostomy.

incision and drainage following vasospasm due to adrenaline ring block. Earlier few cases of penile gangrene in diabetics are reported but auto digestion of penile shaft is not reported in literature [6]. Though there is no well established treatment for vasospasm caused by adrenaline but many drugs e.g. phentolamine, calcium channel blocker, prostaglandin, terbutaline, are useful and Phentolamine is the commonly used drug [5]. Management of ischaemic injury include diabetes control (insulin), tetanus toxoid, broad spectrum antibiotics empirically and specific after culture report, anti-inflammatory drugs, wound care and general measure like hydration, nutrition. In spite of strictly following these measures infection spread to corporal bodies and gangrene of penis digesting the whole shaft. Hyperbaric oxygen and vacuum assisted closure had been in wound healing in diabetic but results in penile gangrene are not encouraging [7]. We did not use both of these modalities. Phalloplasty is treatment of choice is such cases in teenage with control of diabetes [8]. In conclusion we report the first case of auto-digestion of penis in a diabetic child with penile infection. Ring block in diabetics with infection may leads to a fatal outcome. Control of diabetes, prevention of infection and avoiding local block with adrenaline is advised to prevent such complication.

REFERENCES

[1] Clinical Practice Guidelines of The Royal Children's Hospital Melbourne. The Penis & Foreskin Sept 2012.

[2] Nuhu A, Edino S, Agbese G, Kallamu R. Penile gangrene due to strangulation by a metallic nut: a case report and review of the literature. West Afr J Med 2009; 28: 340-2.

[3] Chandra Gupta TS, Rayudu Murthy SV. Donovanosis with auto-amputation of penis in a HIV-2 infected person. Indian J Dermatol Venereol Leprol 2008; 74: 490-2. http://dx.doi.org/10.4103/0378-6323.44308

[4] Fitzcharles-Bowe C, Denkler K, Lalonde D. Finger Injection with High-Dose (1:1,000) Epinephrine: Does it Cause Finger Necrosis and Should it be Treated? Hand 2007; 2: 5-11. http://dx.doi.org/10.1007/s11552-006-9012-4

[5] Järvisalo MJ, Putto-Laurila A, Jartti L, Lehtimäki T, Solakivi T, Rönnemaa T, Raitakari OT. Carotid Artery Intima-Media Thickness in Children With Type 1 Diabetic. Diabetes 2002; 51(2): 493-8. http://dx.doi.org/10.2337/diabetes.51.2.493

[6] Vijayan P. Gangrene of penis in a diabetic male with multiple amputations and follow up: A case report. Indian J Urol 2009; 25: 123-25. http://dx.doi.org/10.4103/0970-1591.45550

[7] Williams NS, Bulstrode CJK, O'Connell PR. Bailey and Love's short practice of surgery 25th ed, 2008; Chapter 30 (421).

[8] Perovic S. Phalloplasty in Children and Adolescents Using the Extended Pedicle Island Groin Flap. J Urol 1995; 154: 848-53. http://dx.doi.org/10.1016/S0022-5347(01)67183-0

Received on 22-07-2013 Accepted on 04-08-2013 Published on 30-11-2013