PRIAPISM IN TYPE II DIABETES MELLITUS

A CASE REPORT

Muthuuri J MMed (Surg)
Consultant General Surgeon

Okanga J FRCP
Consultant Physician
Yossa G MBChB
Physician Assistant

Correspondence to: Dr. J. M. Muthuuri, P.O. Box 84074, Mombasa, KENYA

Key Words: Priapism, Type II Diabetes Mellitus

Abstract

Priapism in type II diabetes mellitus is an uncommon event. A case of this condition in an adult male is presented. More common precipitating factors such as use of medications such as sildenafil or use of an intracarvenosal vasodilator was absent, although diagnostic investigations postulated the cause as thrombotic factors in type II diabetes. A cavernosal-spongiosal shunting procedure was performed and a cystofix inserted to divert urinary flow. However, due to the late presentation of the priapism and the concurrent
infection, much erectile tissue was damaged and normal function of the organ could not be restored.

Introduction

Priapism is a persistent penile erection that does not arise from sexual desire and that fails to subside despite orgasm. It is an uncommon condition with a reported incidence rate of 1.5 per 100,000 men[1]. It is even rarer in diabetic patients; indeed diabetes mellitus is known to cause erectile dysfunction. This paper reports one such case of priapism associated with type II diabetes mellitus, outlining its presentation, investigations and management procedures undertaken.

Case Report

J.K., a 51 year old pastor with type II diabetes mellitus for the last 2 ½ years and with no known addiction presented with acute priapism of four days duration, and an abscess in the left gluteal area. There was no history of use of any offending medications, including sildenafil, or an intracavernosal vasodilator, and neither was there any history of a similar episode in the past. Glycaemic control of diabetes was sub-optimal; the patient had been on Chlorpropamide (diabinese) 500mg daily and Metformin 850mg daily.

Local examination revealed a tender and oedematous penis with suspicious areas of early gangrenous change in the urethra and a partially drained abscess in the left gluteal area. He was also febrile. The patient had a supine blood pressure of 120/80 with no postural drop. There was no pedal oedema and no evidence of proliferative diabetic retinopathy. The clinical examination was otherwise unremarkable.

Investigations performed during the patient's stay in hospital were as follows:
A full haemogram was normal except for leucocytosis of16, 800/mm3 and ESR of 70 mm/hr. His lipid profile revealed normal cholesterol levels but very high triglycerides, conforming to type IV of Fredrichson's ranking. Blood Urea and creatinine were normal. Both fasting and post-prandial blood glucose were elevated (17.8 and 19.5 mm/l respectively). Glycerated haemoglobin (HBA1C) was 11.25%. There were no ketones in urine but there was a trace of sugar. Haemoglobin electrophoresis was of normal adult pattern. Plasma fibrinogen levels were elevated (406 mg/%, the normal range being 150-375). A chest X-ray and ECG were normal. Abdominal and pelvic ultrasounds were normal.
Surgical opinion was sought during hospital stay, upon which a cavernosal-spongiosal shunting procedure was done. The penis collapsed after altered blood and much gas was drained although it remained oedematous. A cystofix was inserted to divert urinary flow. This healed quickly. The abscess cavity was fully drained, toileted and the cavity closed in a single layer. Serosanginous fluid, which was sterile on culture, continued to drain from the penis. The cystofix came out accidentally, allowing the patient to pass urine normally. He developed peno-scrotal fistula, which was draining a lot of pus. Surgical exploration revealed gangrene of the whole penile urethra and parts of the spongiosum. A supra-pubic catheter was inserted, the gangrenous parts dressed and the patient referred for urological surgical care. The urologist performed a proximal urethrotomy to allow the gangrenous urethra to heal.

Discussion

Priapism may occur in association with sickle cell disease, leukemia, and disorders of coagulation, renal dialysis and after spine injuries. Most often the erection is due to idiopathic thrombosis occurring in the prostatic venous plexus. Secondary malignant deposits in the corpora cavernosa or in the pelvis that cause priapism have been reported[2]. There is also a case report of priapism associated with appendicitis[3]. Clitoral priapism has been reported as a rare cause of vulvar pain in women[4]. Virtually all anti-psychotic medications have been reported to rarely cause priapism due to their alpha-adrenergic antagonism that prevents detumescence[5]. This patient did not have any of the above precipitating factors, and repeated platelet counts revealed no thrombocytosis.

Priapism in type II diabetes mellitus, as reported by Sengupta et al, 2001, is usually iatrogenic[6], resultant of intracarvenous vasodilator injection following impotence[7].
This was however not the case in this patient. Type II diabetes mellitus, and Syndrome X of which it forms part, are known to be associated with prothrombotic tendency in view of increased levels of fibrinogen, Von Willebrandts factor and plasminogen activator inhibitor 1[PAI-1][8.] This patient had elevated plasma fibrinogen levels. Although we did not carry out tests for Von Willebrandt's factor and PAI-1 it seems reasonable to postulate that the cause of priapism in this case was due to these known thrombotics in type II diabetes.

Operative treatment by insertion of a venous shunt (e.g. saphenous vein to corpus carvernosum or corpora cavernosa to corpus spongiasum), when carried out within the first 48 hours (preferably 6-12 hours), gives satisfactory results, allowing the patient to achieve normal erections subsequently. Corpus carvenous puncture through the glands has been used efficiently in treating children who have presented early[9]. Recanalization of embolized cavernosal artery has restored patency in a patient with high flow priapism[10]. Success has been reported after intracavernous phenylephrine injections for a recurrent priapism and intracavernous injection with etilefrine[11]. Sickle cell patients' priapism needs long-term follow-up in order to recognise any minor recurrences, which if unchecked could be the principal cause of fibrosis and impotency[12]. Our patient presented late with priapism complicating local and systemic infection. The erectile tissue was already badly damaged and the decision to reserve the organ was purely for its sentimental value.

References

1. Eland I A, Vander L, Sticker BA, Sturkenbomm MJ. Incidence of priapism in the general population. Urol 2001; 57:970-972
2. Krawczuk et al. Priapism as the first sign of pelvic tumour in 2 ½ years old boy. Med Pediatric Oncol 2001 36: 503-504.
3. Locea AJ, Khowry AE. Acute appendicitis presenting as a priapism in an 8 year old. Can J Urol 1998; 5: 597-598
4. Compton MT, Miller AH. Priapism associated with conventional and atypical antipsychotic medications: a review. Paper published by the Department of Psychiatry and Behavioural Sciences, Emory University School of Medicine, Atlanta, Georgia, GA 30306
5. Medina CA. Clitoral Priapism: A rare condition presenting as a cause of vulvar pain. Obstet Gynaecol 2001; 97: 630
6. Sengupta N, Pancht IC, Mukherjee S. Priapism in types II Diabetes Mellitus. J Assol Physicians India 2001; 49:383
7. Schwarzer JU, Hoffman R. Purulent corporeal cavernositis secondary to papavarine-induced priapism. J Urol 1991; 146 : 845-846
8. Juhan VI, Roul et al. Increased plasminogen activator inhibitor activity in non-insulin dependent diabetic patients' relationship with plasma insulin. Thromb Haemol, 1989; 61: 370-3
9. Columbari JF et al. Corpus Carvernos puncture through the glands. An efficient form of treatment in children presenting with early priapism. Euro J Paed Surg 2000; 10: 68-71
10. Park JK, Jeong YB, Han VM. Recanalisation of embolized cavernosal artery: restoring patency with high flow priapism. J Cereol 2001; 105: 2002-2003
11. Ralph DJ et al. Intracarvenous phenylephrine for recurrent priapism. J Urol 2001; 165: 1632
12. Colombari JF et al. Priapism in a sickle cell pre-pubertal child. Euro J Paediatric Surg 2000; 10: 68-71