OPEN ACCESS

GAVIN PUBLISHERS

Journal of Urology and Renal Diseases

Odoemene CA, et al. J Urol Ren Dis: JURD-1132.

DOI: 10.29011/2575-7903.001132

Case Report

Rescue Management of Prolonged Ischemic Priapism Using Al-Ghorab Shunting Plus Burnett Shunting

Charles Azuwike Odoemene*, E.N. Afogu, E.S.I. Ugwuidu

Department of Urology, Federal Teaching Hospital Abakaliki (FETHA), Ebonyi State, Nigeria

***Corresponding author:** Charles Azuwike Odoemene, Department of Urology, Federal Teaching Hospital Abakaliki (FETHA), Ebonyi State, Nigeria. Tel: +234-8169536450; Email: odoemenec@yahoo.com

Citation: Odoemene CA, Afogu EN, Ugwuidu ESI (2019) Rescue Management of Prolonged Ischemic Priapism Using Al-Ghorab Shunting Plus Burnett Shunting. J Urol Ren Dis 4: 1132. DOI: 10.29011/2575-7903.001132

Received Date: 17 December, 2018; **Accepted Date:** 04 January, 2019; **Published Date:** 10 January, 2019

Abstract

Priapism in Sickle Cell Anemia (SCA) is of the ischemic (Low flow) type. It is associated with devastating changes in the corpora tissue if presentation is late. We report a case of a 27-year-old man who presented 9 days after onset of Ischemic Priapism (IP). His genotype was SS. Aspiration and irrigation with normal saline of the Corpora Cavernosa (CC) done in one clinic he visited failed to achieve detumescence. Hundred percent detumescence was achieved after Al-Ghorab corporoglandular shunt followed by Burnett retrograde dilatation of both CC with 7/8 Hagar dilator. Al-Ghorab shunting plus Burnett shunting is effective in achieving complete detumescence in late presentation of ischemic priapism.

Keywords: Al-Ghorab Shunting; Burnett Shunting; Ischemic Priapism; Late Presentation; Sickle Cell Anemia

Introduction

Priapism is a urologic emergency and is defined as a prolonged and persistent penile erection that is unrelated to sexual interest or stimulation lasting more than 4 hours [1-3]. Three types have been described ischemic (low flow), non-ischemic (high flow) and stuttering (recurrent) [1,3,4]. It was first described by Tripe in 1845 [3,5]. Its association with SCA was documented by Diggs and Ching in 1934 [5]. In the general population, an incidence rate of up to 1.5/100,000 person-years has been reported [2,4,6]. Ischemic priapism accounts for more than ninety five percent of all cases of priapism [3-6], with an incidence of 5.34/100,000 men's per year [1].

Priapism in SCA is of ischemic low flow sub type with an incidence of 3.6% in those younger than 18 years old, 42% in those 18 years and above [2,4], with a prevalence rate of up to 35 to 40 percent [5,6]. It is associated with time dependent devastating complications such as erectile tissue necrosis and fibrosis. Late presentation is the norm in developing countries like ours due to low public awareness and visits to poor health facilities before getting to the experts. In these situations, invasive procedures are adopted. We report the use of Al-Ghorab shunting plus Burnett shunting in prolonged IP to achieve complete detumescence.

Case

A 27-year-old male presented to the accident and emergency with a 9 days history of painful, unprovoked penile erection. There was no sexual arousal, no use of aphrodisiacs and recreational drugs. He had a similar episode 2 year back that resolved spontaneously after 6 hours of onset. He did not know his genotype. He had visited a clinic where aspiration with a needle and irrigation with normal saline of the CC were done without achieving detumescence.

He was pale, pyrexic, mildly icteric and in distress. He had a woody hard tender and erect penile shaft pointing cephalad (Figure 1), with Erection Hardness Score (EHS) of 4.

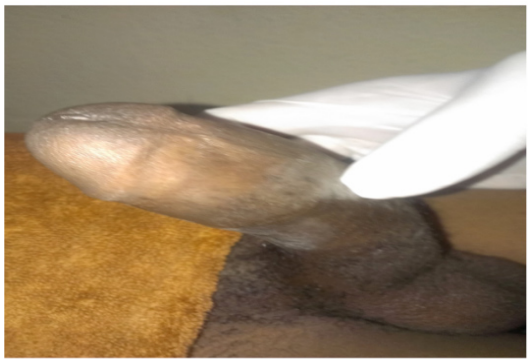

Figure 1: Priapism showing cephalad pointing penis.

The glans and corpus spongiosus were flaccid. The CC showed maximal tumescence.

The results of investigations are as shown (Table 1).

Item	Value	Normal Range	Units
PCV	21	38.8 - 50	%
WBC	20	4.5 - 11.0	1000/cubic ml
Genotype	SS	-	-
Blood Film	Hypochromasia, Anisocytosis, Target cells, Poikilocytosis, Toxic granulations of WBC	-	-
Corporal blood aspirate			
PH	7.18		mmHg
pCO_2	66		mmHg
pO_2	25		
Two weeks post shunt			
PCV	36	38.8 - 50	%
WBC	10.8	4.5 - 11.0	1000/cubic ml
PCV = Packed Cell Volume, WBC = White Blood Cell Count			

Table 1: Laboratory values of results of investigations.

Patient was adequately hydrated with intravenous fluids and anemia corrected with blood transfusions. Parentral analgesia was given. Intravenous levofloxacin, 500mg daily was given for 5 days followed by oral levofloxacin for another 7 days. The patient was aseptically catheterized to monitor urinary output.

Under general anesthesia, with tourniquet temporally put at the base of the penis to minimize bleeding, Al-Ghorab shunting followed by Burnett shunting were carried out as follows. A 2cm transverse incision was made on the glans, 1cm distal the coronal sulcus. The cavernous tissue of the glans was retracted. We excised circular cone segment of tunica albuginea tissue, 5mm in diameter at the tip of each CC thus establishing a shunt between the CC blood flow and that of the glans. An immediate upward slash of dark deoxygenated blood was observed indicating very high pressure within the cavernosal chambers. Retrogradely, we passed 7/8 Hegars dilator into each CC distal opening dilating both and removing clogged blood to ensure adequate drainage. Manual compression of the penis from proximal to distal was done until bright red blood was seen. Complete detumescence was achieved on the table (Figure 2). The incision on the glans was closed with running vicryl 3/0 suture (Figure 3).

The patient was discharged after 5 days and at 2 weeks post shunt, the penis was still flaccid (Figure 4). He however developed Erectile Dysfunction (ED) 14 days after the shunt. There has been no recurrent IP till date.

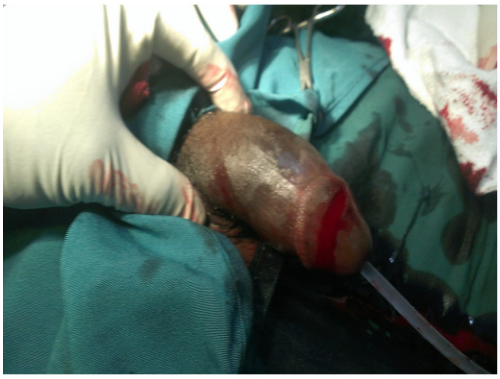

Figure 2: Detumescence after Al-Ghorab plus Burnett shunting showing bright red blood at the right incision.

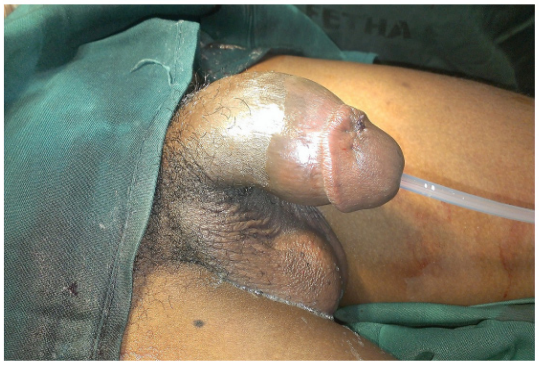

Fig 3: Running vicryl suture closing incision on the glans.

Figure 3: Running vicryl suture closing on the glans.

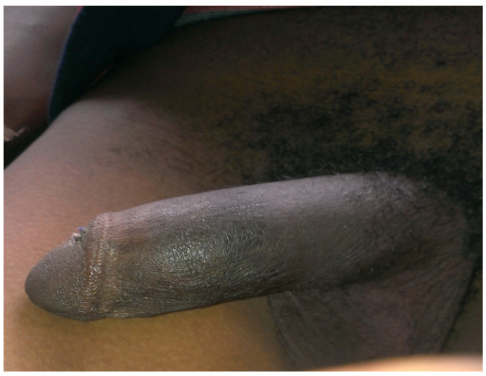

Figure 4: Penis two weeks after Shunt.

Discussion

There was a buildup of deoxygenated blood within the CC in our patient as evidenced by PH of 7.18, PCO_2 of 66, pO_2 of 25 mmHg respectively from analysis of CC blood aspirate (Table 1). This buildup of deoxygenated blood was consequent upon persistent relaxation of the CC smooth muscles compressing the subtunical veins with prevention of outflow of deoxygenated blood via the sinusoids. Thus, there was increase in intracorporal pressure above the mean arterial compressing the cavernosa arteries, preventing arterial inflow [4]. Consequently, there was blood stagnation within the two CC leading to CC rigidity and pain as in the index patient.

This represents a compartment-like syndrome with high pressure within the cavernosa spaces. The index patient was in this state for nine days explaining upward splash of deoxygenated blood during the shunt procedure. Furthermore, there are hypoxic, hyperbaric and acidotic reactions within the cavernosa spaces leading to various histological changes manifesting beyond 24 hours as erectile tissue necrosis and fibrosis with resultant Erectile Dysfunction (ED) which may be as high as 90% [2,3,5-8].

The index patient presented late which is the norm in developing countries like ours. This is due to low awareness and existing poor health facilities. He visited three clinics before getting a urology consult in our centre. In this state, we had to use Al-Ghorab shunting followed by Burnett shunting to remove clogs of deoxygenated blood thereby maintaining adequate corporal blood flow making it possible to achieve 100% detumescence on the table.

It is not surprising that the patient developed ED post shunt due to at the molecular level, there are decreases in phosphodiesterase type 5 and RhoA/Rho kinase, increased levels of adenosine and the presence of acidocis, glucopenia and hypoxia all contributing to cavernosal smooth muscle dysfunction with resultant irreversible devastating changes within the corporal tissues [8,9].

Conclusion

We have reported on a successful management of ischemic priapism in a SCA patient presenting 9 days after onset, achieving full detumescence after Al-Ghorab and Burnett shunting procedures. Due to late presentation leading to irreversible hypoxic and acidotic changes within the CC tissues, he developed ED 2 weeks post shunt. However, there has been no recurrence of priapism till date. Finally, energetic approach should be adopted in developing countries to increase awareness of this condition in the society. This will go a long way in decreasing to the barest minimum the irreversible damage occurring within the corporal tissues thus preserving erection after achieving detumescence.

References

1. Hundal M, Reed-Maldonado AB, Lue TF (2017) Advances in the understanding of priapism. Trans Androl Urol 6: 199-206.
2. Ahmed M, Augustine B, Mathew M, Awaisu M, Sudi A, et al. (2017) Prognostic factors and outcome of management of ischemic priapism in Zaria Nigeria. Niger J. Surg 23: 15-19.
3. Shigehara k, Namiki M (2016) Clinical management of priapism. A review world J Mens health 34: 1-8.
4. Ridgley J, Raison N, Sheikh MI, Dasgupta P, Khan MS, et al. (2017) Ischemic priapism: A clinical review. Turk J Urol 43: 1-8.
5. Olujohungbe A, Burnett AL (2013) How I manage priapism due to sickle cell disease. Br. J. Haematol 160: 764-765.
6. Anele UA, Brian VLe, Resar LMS, Burnett AL (2015) How I treat priapism. Blood 125: 3551-3558.
7. Tay YK, Spernat D, Rzetelski-West K, Appu S, Love C (2012) Acute management of priapism in men. BJU Int 109: 15-21.
8. Muneer A, Alnajjar HM, Ralph D (2018) Recent advances in the management of priapism. F1000Res 7: 37.
9. Bivalacqua TJ, Burnett AL (2006) Priapism: New concepts in the pathophysiology and new treatment strategy. Curr. Urol. Rep 7: 497-502.