Surgical Management of Resistant Priapism

Rikki Singal · A. S. Bawa · Rashpal Singh ·
Pradeep Sahu · Anupama Gupta

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Abstract We report a 31 year old patient, presented with painful erection since 48 hours. There was no known predisposing factor on history and examination. Surgery for priapism is rarely indicated nowadays but conservative management failed to achieve detumescence in our case. So Winter's shunt surgery was done which failed then a formal shunt was created between corpora cavernosa and spongiosum which also failed to achieve detumescence. After 4 days - a formal left side

cavernosa saphenous shunt procedure was done and detumescence achieved within 24 hrs .Follow up showed good results.

Keywords Low flow priapism · Management · Surgery

Introduction

Priapism is a persistent, painful erection that continues beyond or is unrelated to sexual stimulation [1]. It is a rare but potentially devastating urological emergency that can result in erectile dysfunction. The common age groups are 5–10 years and 20–50 years [1]. Typically the corpora-cavernosa only is affected with glans and corpora-spongiosum being spared [2]. The goal of management is to achieve detumescence and preserve erectile function.

Case Report

A 31 year old patient presented with painful erection after 48 hours. There was no known predisposing factor on history and examination. Six similar episodes had occurred over the past one year, none lasting for more than 24 hours with spontaneous detumescence without medical intervention. At time of presentation penis was swollen and tender with tumescent corpora cavernosa. Analysis of arterial blood gas taken from the corpora showed pH 7.027 and pO₂- 25.3 (spO₂-23%). In our case, diagnosis was ischemic priapism. Color Doppler of penis showed no flow in the distal left and entire right

This case is done in Government Medical College and Hospital, Sector-32, Chandigarh, India

R. Singal (✉) · P. Sahu
Department of Surgery, Maharishi Mrakandeshwer Institute
of Medical Sciences and Research,
Mullana, Distt-Ambala, Haryana, India
e-mail: singalrikki@yahoo.com

P. Sahu
e-mail: drpradeepkumarsahu@gmail.com

A. Gupta
Department of Anatomy, Adesh Institute of Medical Sciences
and Research,
Bathinda, Punjab, India

A. S. Bawa · R. Singh
Department of Urology,
Government Medical College and Hospital,
Sector-32,
Chandigarh, India

A. S. Bawa
e-mail: simisingal@yahoo.co.in

Fig. 1 Color Doppler of the penis - showed no flow in the distal left and entire right cavernosal artery. Proximal left Cavernosal artery showed elevated diastolic flow with reversal of diastolic flow

cavernosal artery (Fig. 1). Proximal left Cavernosal artery showed elevated diastolic flow with reversal of diastolic flow. Intra-cavernous pressure was not recorded. Colour Doppler of dorsal penile artery showed normal flow (Fig. 2).

Aspiration and irrigation of the corpora was done with normal saline using canula of 16G and later on orally terbutaline was given but both failed to achieve detumescence. A Winter's Shunt [1, 3] was done after 24 hrs and detumescence was achieved; but priapism recurred after 24 hours.

Fig. 2 Colour Doppler of dorsal penile artery – showed normal flow

So a formal shunt was made between the corpora cavernosa and spongiosum (Quackels procedure [1, 4]). On right side- bulbospongiosum muscle divided, right corpora cavernosa exposed, 2 cm long defect created over corpora and anastomosed to raw cavernosa with 6–0 Polydioxanone. This also failed to achieve detumescence. Then after 4 days a formal left sided cavernosa saphenous shunt (Grayhack procedure [1, 4]) was done. A vertical incision over left saphenous was vein given. A 13 cm long saphenous vein segment was brought to the base of penis in subcutaneous tunnel and anastomosis done with 6–0 polypropylene suture. After 24 hrs detumescence was achieved and persisted. Patient is in regular follow up and having active sexual life.

Discussion

Although in the younger group (5–10 years) priapism is most often associated with sickle-cell disease or neoplasm, in older group (20–50 years) most cases are idiopathic [2, 3]. The majority of cases (46%) are idiopathic with alcohol and drug abuse (21%), perineal trauma (12%) and sickle cell anemia. (11%) accounting for the rest [3].

Priapism is of three types- ISCHEMIC (Veno- occlusive, low flow), NON- ISCHEMIC (arterial, high flow), STUTTERING (intermittent). Some patients are able to achieve erection on sexual stimulation, but the prolonged uncorrected ischemic priapism may cause permanent impotence. In our case diagnosis was made as ischemic priapism. We followed the American urological guideline (AUG) on the management of priapism [1]. However results were not optimal and failed to achieve complete detumescence. Then multiple surgeries were done and recurrence did not occur on follow up.

The first line of treatment involves aspiration of the corpora and intracavernosal injection with an adrenergic agonist [1, 2]. Medical treatment is aimed at decreasing arterial inflow and increasing venous outflow. Surgery for priapism is rarely indicated today [1, 2]. The decision to initiate surgery requires the failure of non-surgical intervention [1]. Non-ischemic priapism is usually managed by non-surgical methods. With vigorous penile cavernous irrigation even certain cases of early ischemic priapism can be converted into non-ischemic priapism and are subsequently managed with the non-surgical approach [2]. For ischemic priapism of extended duration (of more than 48 hrs) response to intracavernous injections of sympathomimetics and to oral drugs becomes increasingly unlikely [1]. In cases unsuccessful beyond this step, proximal shunts are advised (shunts with saphenous vein). On the other hand, these kind of interventions have high complications

*Erection greater than 4 hours duration.

†Proceed upon treatment failure.

and low success rates. In spongier - cavernous anastomosis 62.5% of cases have conservation of erection [4]. Results are better before the age of 40 (70% success) then in older patients (50% Success). In sapheno-cavernous anastomosis, after bilateral surgery conservation of erection is 54.5% [4]. Since the cases with unsuccessful distal shunt will result in severe fibrosis and erectile dysfunction, application of penile prosthesis could be very difficult. Because of that, emergency penile prosthesis is advised in these kinds of cases AUA Management algorithm for priapism [1].

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