



CORPORACAVERNOSA-SAPHENOUS VEIN SHUNT(GRAYHACK) IN THE TREATMENT OF PRIAPISM

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ABSTRACT

OBJECTIVE: To study the outcome of Corporacavernosa-Saphenous vein shunt in the treatment of priapism .

METHODS: It's a retrospective study, of patients, who underwent corporacavernosa-saphenous vein shunt for priapism ,during the period 2017 to 2018 at Government Kilpauk Medical College Hospital,Chennai,India. Total of 3 patients , were enrolled in this study.The age group were between 31 years to 45 years. All the three priapisms were of low flow ischemic type. Corporacavernosa-Saphenous vein shunt was created, after other modalities of treatment such as penile aspiration,penile injection of sympathomimetic drugs and penile distal shunts have failed .

RESULTS: All the three patients responded well to this Corporacavernosa-Saphenous vein shunt procedure with good outcome.

CONCLUSION: Corporacavernosa-saphenous shunt gives good results and may be considered in the treatment of priapism if other modalities doesn't help.

KEYWORDS : Priapism, Saphenous vein shunt

INTRODUCTION

Priapism is an abnormal persistent erection of penis,painful and it is unrelated to sexual stimulation and unrelieved by ejaculation. Incidence is of 1.5 per 100000. Its a surgical emergency. Anatomically it involves corpus cavernosa, sparing corpus spongiosum and glans. Can occur in all age groups. The etiology for adult (> 18 years) priapism are Neurological disorder 3 %,Perineal and genital trauma 7%,Neoplasm 10 %,Sickle cell anemia 20%.Idiopathic 35% and Pharmacologically induced 25 %. Priapism is of two types.High flow (non-ischemic) and Low flow (ischemic) types. The diagnosis and classification of of priapism is based on clinical evaluation. Ischemic priapism (venous low flow) is more prevalent where there is absent cavernous blood flow. Low flow or ischemic priapism is more dangerous as after 24 hrs there is evidence of irreversible smooth muscle cell necrosis ,and destruction of vascular endothelium making susceptible for greater complications due to abnormal veno-occlusive mechanism with venous stasis and impaired oxygenation of erectile tissue resulting in future erectile dysfunction ,secondary to ischemic fibrosis.

High flow or non -ischemic priapism occurs following trauma to perineum and genitalia resulting in increased flow to arteries and arteriovenous shunt formation with venoocclusive mechanism intact.Tissue anoxia and ischemia is absent in high flow priapism and is less painful and less chance of erectile dysfunction in future . High flow priapism is relatively less emergency and does not need urgent surgical attention.Apart from routine complete blood count test, reticulocyte count ,sickle cell anemia screening and urine analysis, specific test includes Penile color Doppler scanning to confirm. It is recognised that ischemic priapism of extended duration that is > 48 hrs is unlikely to resolve with intracavernous injection of sympathomimetics or irrigation therapy, and therefore surgical shunting should be performed in a timely manner.

First line surgical therapy is distal corpora-glans shunt (winter shunt,ebbehoj shunt and T shunt).Subsequent proximal shunt such as Corporacavernosa-Saphenous vein shunt (Grayhack) is considered if the distal shunt doesn't help in relieving priapism.Since most shunt appears to close in time, it is believed that shunting does not cause permanent erectile dysfunction.

MATERIALS AND METHODS

- **Study Design :**Retrospective Study
- **Study Centre:** Govt. Kilpauk Medical College Hospital, Chennai, India.
- **Study Duration :** 2016 to 2017
- **Study Procedure:** Three patients with low flow priapism who underwent corporacavernosa-saphenous vein shunt ,were enrolled and their medical records were analysed

RESULTS

TABLE 1 Grayhack or Corporacavernosa saphenous vein shunt

Sl no	Age group	Etiology	Type of priapism	Procedure
1	45 years Married	Idiopathic	Low flow ischemic	Grayhack shunt
2	31years Married	Idiopathic	Low flow ischemic	Grayhack shunt
3	30 years Unmarried	Idiopathic	Low flow ischemic	Grayhack shunt

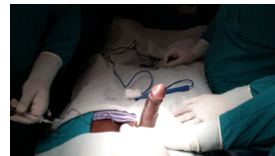


Figure 1. Low flow priapism in a 45 years aged patient



Figure 2. Detumescence after Corporacavernosa-Saphenous vein shunt



Figure 3. Low flow priapism in a 31 years aged patient

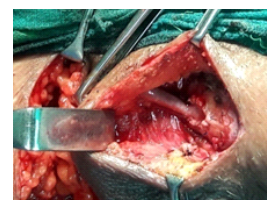


Figure 4.Corporacavernosa-Saphenous vein shunt creation (Grayhack)

DISCUSSION

In our study all the three patients presented with painful priapism among which one patient presented after 48 hours of priapism and other two patients presented within 24 hours of priapism. Detailed history and clinical evaluation made. Corporacavernosa was rigid and tender .There was no history of genital trauma or provocation of pharmacological agents. No history of blood dyscrasia. Regarding the marital status two patients was married and one patient unmarried . Clinically all the three cases were of low flow priapism. All basic investigations were done and was normal. Hence we consider all the three cases were of idiopathic priapism. Penile Colour Doppler evaluation of all the three cases revealed bilateral enlarged corpus cavernosa with no detectable flow in both cavernosal arteries with reversed diastolic flow. As an immediate measure under strict aseptic precaution needle aspiration of blood from the base of corpus cavernosa was done, which didn't give much relief. Subsequently distal shunt between corpus cavernosa and glans penis was created

with injection of (alpha adrenergic) sympathomimetic agent phenylephrine 200 microgram/ ml as adjuvant measure. In spite of the above measures in all the three cases there is no complete detumescence. Hence as per the urologist recommendation proximal corpora cavernoso- saphenous vein shunt (grayhack shunt) procedure was done in all the three cases. The procedure was done under spinal anaesthesia. Incision is made at the penile base and tunica albugenia of the corpora cavernosa is exposed. Next an incision is made at the saphenofemoral junction 3-4 cm below the inguinal ligament ,the great saphenous vein is identified and mobilized for a distance of 10 cm distal to fossa ovalis. The saphenous vein is ligated distally and subcutaneous tunnel created between penile base incision and saphenofemoral junction incision .An ellipse of tunica albugenia measuring 1.5x 0.5 cms, is excised and vein is drawn without tension or torsion in to the penile wound .Then the vein is spatulated and anastomosed to tunica albugenia using a continuous 5.0 prolene suture. Standard protocol of intermittent squeezing of penile tissue is recommended . Intermittent manual squeezing of shaft of penis will keep the shunt open and prevent recurrence of priapism . Injection daltaparin 5000 units subcutaneously once a day was given in the postoperative period for three days to prevent shunt thrombosis. All the three patients responded well to grayhack shunt and was relieved of pain and detumescence achieved completely. The success rate for surgical decompression for priapism is around 75% in literature. In our study ,the success rate for grayhack shunt is 100 %

CONCLUSION

The aim of this shunt is to bypass the obstructive veno-occlusive mechanism. Grayhack shunt (proximal corpora cavernosa saphenous vein shunt) can be considered in the treatment of refractory low flow priapism with good outcome, if aspiration therapy and distal shunt procedure fails to relieve priapism. It's a safe surgical procedure without any major complications .Prompt intervention is warranted in the management of priapism in order to avoid future erectile dysfunction due to ischemic fibrosis.

Conflict of interest: Nil

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