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Case Study

MANAGEMENT CHALLENGES IN ISCHEMIC PRIAPISM – A CASE SERIES

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A R T I C L E I N F O

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A B S T R A C T

Objective: The aim of this presentation is to review the current management options and to analyse the various management challenges and outcomes of priapism.
Methods: This is a case series of 6cases of priapism who presented to our Urology department, Kilpauk Medical College Hospital & Govt Royapettah Hospital during the period of 1 year 6months from January 2017 to June 2018. 2 among 6 cases, presented within 6 hours and were successfully managed conservatively. 2 cases underwent Glanular T shunt. All cases were managed in a stepwise manner, first by penile aspiration followed by intracavernosal injection of phenylephrine which was repeated several times. Surgical correction was done in 4 cases. Distal corpora glanular T shunt was performed first. It failed in 2 patients which were managed with venous bypass by Gray Hack (sapheno-cavernosal) shunt. Postoperatively patients were given anticoagulants for 5 days along with pentoxifylline 400mg tds.
Results: 2 cases who presented early were successfully managed conservatively without the need for surgical intervention. There was no reported incidence of erectile dysfunction in these cases. In those patients (4) who presented late and had surgical intervention, pain relief was achieved & varying degrees of erectile dysfunction was present.
Conclusion: The management of ischemic priapism is to achieve normal penis and normal erection. Time duration between onset and presentation and the timing of surgical intervention were the two most important predictors of successful outcome in the management of priapism

INTRODUCTION

Ischemic priapism is a rare and challenging condition with persistent painful erection characterized by little or no cavernosal blood flow. To prevent necrosis and erectile dysfunction, immediate intervention is essential.

Objective

The aim of this article is to review the current management options and to analyse the various management challenges and outcomes of priapism.

MATERIALS & METHODS

This is a case series of 6 patients with ischemic priapism who presented to the Department of Urology in Government Kilpauk Medical College & Hospital and Government Royapettah hospital during the period of 1 year 6 months from January 2017 to June 2018. All patients presented with persistent painful erection after the inciting event. Clinical examination revealed erect, tender and rigid penis. All patients underwent evaluation with Complete blood count, Renal function test, BT, CT, Peripheral smear and Colour Doppler Ultrasound.

All patients were initially managed with cavernosal aspiration. For persistent erection, heparinized saline intracoporal irrigation followed by Intracavernosal phenylephrine injection upto a maximum of 1 mg with aspirations in between each injection is done.

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Persistent erections were managed with shunt surgery, initially distal Glanular T shunt followed by proximal Gray Hack Shunt. All patients who underwent surgery were postoperatively managed with IV antibiotics, T. Pentoxifylline 400mg PO TDS, Inj. LMWH 5000 units SC OD for 3 days and T. Aspirin 75mg OD for 5 days. Patients were discharged once the priapism is reduced and followed up in outpatient department.

RESULTS

A total of 6 patients were included in this case series with age range between 25 – 40 years. 3 were married and 3 were unmarried. Sexual intercourse in 2, Masturbation in 2 and penile doppler study in 2 were identified as the initiating event. Two patients presented within 6 hours, two at 24 hours and remaining two more than 24 hours. Those two patients who presented within 6 hours were conservatively managed with cavernosal aspiration and intracavernosal phenylephrine injection. Glanular T shunt was done and successful in the patient presented within 24 hours and the remaining 2 patients were managed with proximal Gray Hack shunt. Normal erection resulted in four patients who presented with 24 hours and the results are variable in those who presented after 24 hours. For patients who underwent proximal shunt surgeries, rigidity reduced by 40% in the immediate postoperative period. Detumescence was estimated at 80% with complete pain relief after 48 hours. Follow-up after discharge showed continued improvement with partial erections.

Table 1 Case Summary

Case No	Age (Years)	Marital Status	Inciting EVENT	Time Since Onset
1	25	Unmarried	Masturbation	5 hours
2	34	Married	Penile doppler study	6 hours
3	32	Married	Sexual intercourse	24 hours
4	39	Married	Sexual intercourse	3 days
5	32	Unmarried	Masturbation	5 days
6	40	Unmarried	Penile doppler study	24 hours

Table 2 Management Summary

Case no	Conservative management	Surgery	Erection
1	Cavernosal aspiration	-	Normal
2	Intracavernosal phenylephrine	-	Normal
3	Aspiration + Injection	Glanular T shunt	Normal
4	Aspiration + Injection	Glanular T shunt Grayhack shunt	Variable
5	Aspiration + Injection	Glanular T shunt Grayhack shunt	Variable
6	Aspiration + Injection	Glanular T shunt	Normal

Fig 1 Cavernosal Aspiration

Fig 2 Phenylephrine Injection

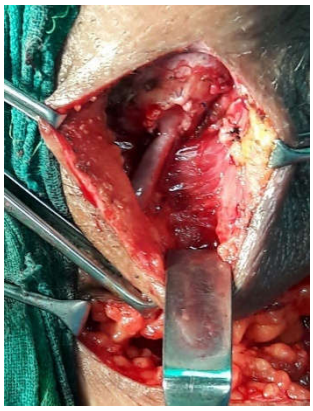

Fig 3 Persistent Erection Managed By Grayhack Shunt

DISCUSSION

Priapism is a pathological condition representing a true disorder of penile erection that persists for more than 4 hours and is beyond, or is unrelated to, sexual interest or stimulation. Overall, erections lasting up to 4 hours are by consensus defined as 'prolonged'. The incidence rate of priapism in the general population is low (0.5-0.9 cases per 100,000 person years)[1]. There exist 3 types of priapism: ischeamic (low flow), non-ischemic (high-flow) and stuttering (recurrent) priapism[3,8].

Ischaemic priapism is the most common, accounting for more than 95% of all cases[2]. Ischaemic priapism is identified as idiopathic in the vast majority of patients, while sickle cell anaemia is the most common cause in childhood. Ischaemic priapism occurs relatively often (up to 35%) after intracavernous injections of papaverine-based combinations. Arterial priapism usually occurs after blunt perineal trauma. Stuttering priapism has the same aetiology as the ischaemic type, with sickle cell disease being the most common cause. But the cause can also be idiopathic and in rare cases may be due to a neurological disorder.

Diagnosis should be made as soon as possible after presentation.History should include duration of erection, circumstances under which it arose, associated pain, medication history, prior episodes of priapism. Physical examination should be performed to ascertatinwhether iti is fully erect (ischemic) or partially erect (non-ischemic). Penile blood gas analysis helps in discriminating the two types with ischemic priapism giving rise to acidotic, hypoxic, hypercarbic cavernous blood gases. Penile doppler shows absence of blood flow through cavernosalarteris due to the increased intracoporeal pressure above the mean arterial pressure thereby preventing arterial blood flow. Perineal examination should also be performed to rule out trauma leading to non-ischemic priapism.[4]

The management algorithm followed by us and supported by various studies is showed below:[3,4,5]

Initial conservative measures include local anesthesia by penile block followed by insertion of wide bore 16-18 G needle through the glans into the corpora cavernosa and aspiration of cavernosal blood until bright red arterial blood is obtained. This is followed by cavernosal irrigation with 0.9% Normal saline solution.

For persistent priapism intracavernosal therapy with adrenoceptor agonist is tried. Current first line therapy is phenylephrine with aliquots of 200 micrograms being injected

every 3-5 mins until detumescence is achieved. Maximum dose is 1 mg within 1 hour. Other drugs that can be used for intracavernosal therapy includes Etilephrine, Methylene blue, Adrenaline, Terbutaline.

Failure of these modalities indicate the need for surgery with shunting procedures. There are 4 types of shunts being perfomed: percutaneious distal (corpora-glandular), open distal (corpora-glandular), open proximal (corporospongiosal) and venous shunts.[4,5] Both AUA and EUA recommend stepwise escalation of shunt surgeries, heginning with less invasive with lower rates of complications and then moving onto more invasive techniques, beginning with distal and then escalating to proximal shunting if necessary.[6,9]

It is recommended to perform distal shunting first. Types of distal shunts include Winter's, Ebbehoj's, T -shunt and Al-Ghorab's shunt. If the distal shunting fail to resolve priapism, treatment should be escated to proximal shunt procedures like Quackel's or Sacher shunt. Perisistence of priapism following proximal corpora spongiosal shunt mandates the need for venous shunts such as Grayhack or Barry. In this shunting blood is drained into saphenous (Grayhack) or superficial/deep dorsal veins (Barry)[4,5,10]. These treatments are last resort before the insertion of penile prosthesis.[7] Primary penile implantation should be considered for priapism that has been present for more than 36 hours, as these usually result in permanent erectile dysfunction and penile deformity.[11]

CONCLUSION

Priapism is a medical emergency and requires efficient diagnosis and immediate intervention. Primary goal of treatment is to achieve a normal appearing penis with normal erection. Time duration between onset and presentation and the timing of surgical intervention were the two most important predictors of successful outcome in the management of priapism in our case series. Positive outcomes and future erectile function are closely related to duration of tumescence.

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