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Research Paper

Ischemic Priapism Presentations and Management A 5 Year Review In Abia State University Teaching Hospital, Aba. South Eastern Nigeria.

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ABSTRACT
Priaprism is a prolonged sustained penile erection which may not be related to sexual Excitement. Ischemic Priaprism is the common variety of priaprism.
Our objective was to review the etiology and pattern of presentation and management options offered to the patient`s under review.
A total of 10 cases were seen during the period under review from January 2015 to December 2022 with age range between 28 and 54 years (mean age of 40 years). Their case flies were retrieved and relevant data obtained.
Of these ten patients, four (40%) were sickle cell patients. Two patients (20%) presented within 24hrs, while one patient (10%) presented within 48hrs.
Two patients (20%) presented after three days while four patients (40%) presented after five days. One patient (10%) presented after three weeks.
Seven patients (70%) had been to peripheral hospitals before presentation.
Two patients (20%) admitted to the use of sex enhancing drugs and herbal preparations prior to the onset of priaprism. Four Patients (40%) had no identifiable cause for their priaprism
All the ten patients (100%) had distal glano-cavernosal shunt (ALGORAB TECHNIQUE) before complete Detumescence was achieved.
Eight patients (80%) developed some degree of erectile dysfunction during the follow-up period.
Ischemic priaprism though uncommon, is fairly common in our environment. Sickle cell disease and the use of herbal preparations still play a significant role in its etiology.
We found the distal shunting procedure (ALGORAB) an optimal modality of management. Late presentation was found to be a major cause of poor outcome.
KEY WORDS: *Ischemic priaprism, Corpus Cavenosum,, Erectile dysfunction and Aba.*

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I. INTRODUCTION:

Priaprism is a purposeless, persistent, sustained pathological penile erection that maybe painful and may not be related to sexual desire.
Priaprism is classified on hemodynamic basis into two types:

- Ischemic or low flow priaprism
- Non Ischemic or high flow priaprism.

It is also classified clinically into three types:

- Major priaprism if it lasts more than four hours
- Minor priaprism if it lasts less than four hours
- Stuttering priaprism where priaprism occurs many times with spontaneous resolution of each episode.

Priaprism is said to be primary when there is no known causative factor and secondary when the causative factor is known .

Ischemic Priaprism even though uncommon is the more common variety of priaprism.

The Ischemia affects the copora cavernosa sparing the glans penis and corpus spongiosum.

However, very occasionally, the corpus spongiosum is involved, a condition known as TRIPOD PRIAPISM occasionally seen in malignant states with metastases infiltrating the corporal bodies and causing venous obstruction.

Ischemic priaprism is associated with significant morbidity due to psychological, socio-economic and physical factors such as pains and potentially irreversible compromise of erectile function.

Intervention after 24hrs carries a high risk of cavernosal breach leading ultimately to erectile dysfunction.

The duration of Cavernosal Ischemia is a determinant of the outcome and therefore, the Major objective of management is to reduce cavernosal pressure and increase arterial inflow to restore satisfactory oxygenation of cavernosal tissues preventing infarction and subsequent fibrosis.

II. METHODOLOGY:

This was a retrospective study spanning five years from January 2015 to December 2020.

A total of ten patients were diagnosed with Ischemic Priaprism within the review period.

The case files of these patients were retrieved and their bio-data and other relevant information obtained.

All the ten patients had surgical management.

Follow-up was for a period ranging between 3 to 12 months.

INCLUSION CRITERIA:

Only patients diagnosed and managed for Ischemic priaprism within the review period were included in this study.

EXCLUSION CRITERIA:

Patients seen outside the review period and those who did not consent to any form of management were excluded from this study.

III. RESULTS:

Ten cases were evaluated and treated between 28 and 54 years of age (mean age 40 years).

Only two patients (20%) presented within 24hrs while one patient (10%) presented within 48hrs.

Two patients (20%) presented after three days while four patients (40%) presented after five days.

One patient (10%) presented after three weeks.Four out of the ten patients (40%) had sickle cell disease who had been experiencing stuttering priaprism in the past.

Seven patients (70%) had visited peripheral hospitals before presentation.

Two (20%) admitted to the use of sex enhancing drugs and herbal preparations prior to the onset of priaprism.

Four Patients (40%) had no Identifiable cause for Priaprism

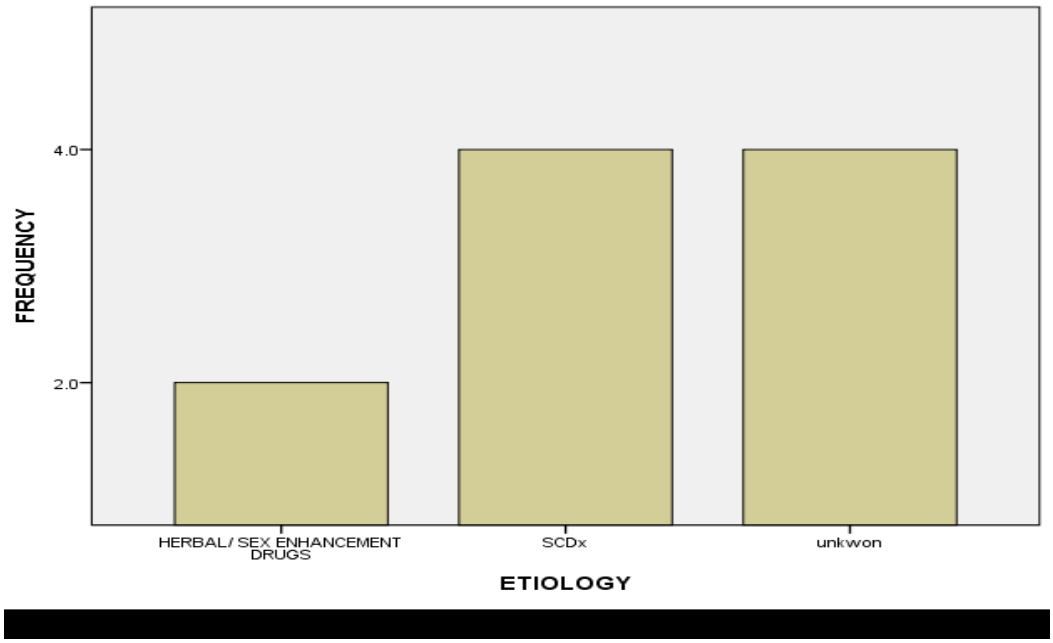
All patients (100%) had distal shunting procedure – distal Glano cavernosal shunt before complete detumescence could be achieved.

Four patients (40%) had recurrence of tumescence but only one had repeat shunting.

Only two patients (20%) had Rehydration, Aspirations and Sympathomimetics prior to shunting.

Eight patients (80%) had various degrees of erectile dysfunction and were evaluated using the international index of erectile function.

INCIDENCE OF CASES AGAINST ETIOLOGY



TIME OF PRESENTATION AFTER INCIDENCE

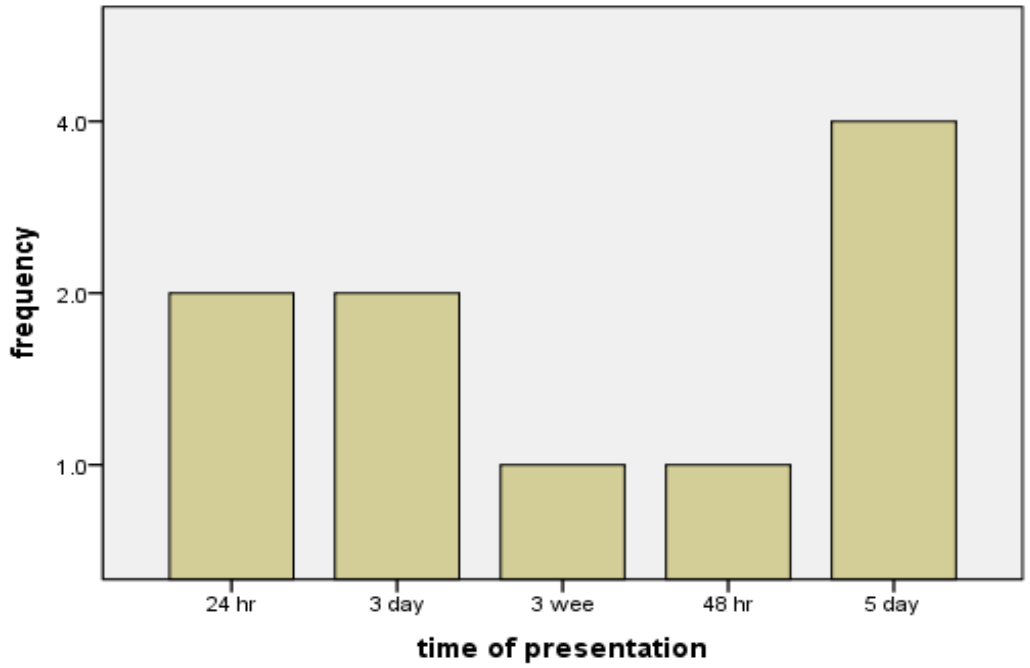
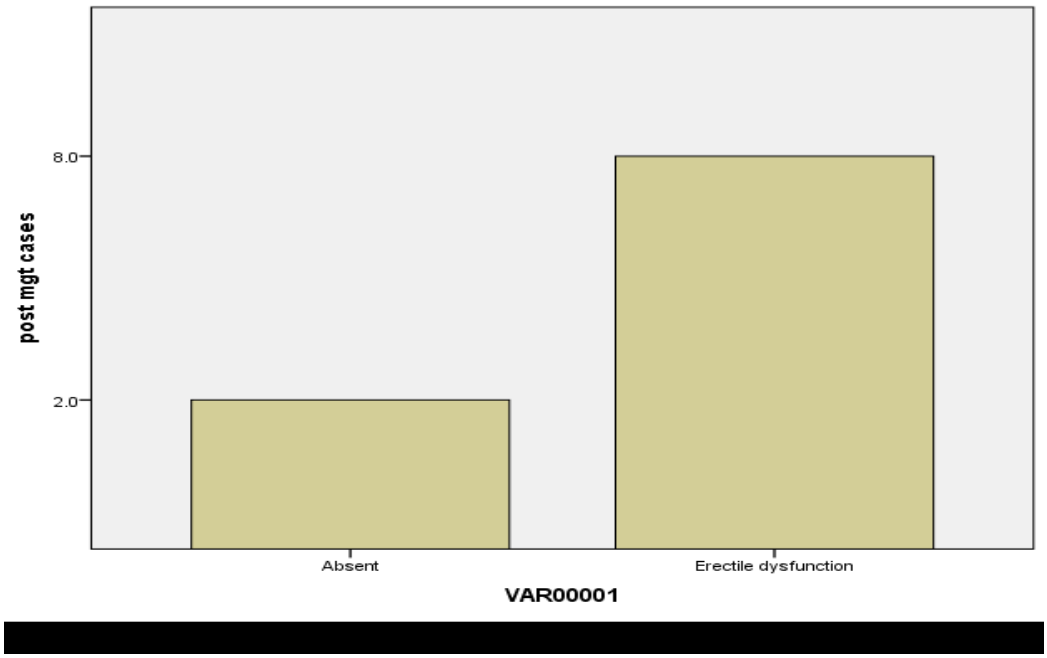


TABLE 3: INCIDENCE OF ERECTILE DYSFUNCTION ON FOLLOW UP



IV. DISCUSSION:

Ischemic priaprism is a urological emergency because the little or no flow of arterial blood to the corporal cavernosal leads to infarction and subsequent fibrosis resulting into various degrees of erectile dysfunction.
The sequence of events in Ischemic Priapism includes:

- Blocking of the trabecular veins followed by
- Increase in cavernosal pressure as a result of arterial inflow in the presence of venous outflow obstruction
- Cessation of arterial inflow when intra-cavernosal pressure rises beyond arterial pressure.
- Intra-cavernosal stasis leading to severe Hypoxia and Acidosis.
- Engorgement of the corpora with deoxygenated blood, with stretching of the Tunica Albuginea surrounding the corpora causing compression of the Emissary veins, thereby increasing the engorgement, pains and rigidity.

In the sickle cell patient, the pathogenesis is different.
The hemoglobin-s in sicklers is prone to heamolysis and polymerization.
This polymerization of sickle Hb causes veno-occlusion.
Heamolysis causes release of free Hb which reacts with endothelial Nitrous oxide (NO), converting it to Nitrates and therefore Scavenging or reducing endothelial NO
Arginase1, a product of heamolysis is released into plasma and it converts L-arginine a substrate for NO synthesis into ornithine there by reducing endothelial NO.
With reduction in endothelial NO,Phosph diesterase 5(P D 5) which degrades cyclic GMP is dysregulated.
In the event of sexual excitement, with release of neuronal NO which activates Guanysil cyclase that converts GTP to cGMP, there is little PD5 due to dysregulation. There is therefore excessive relaxation of the cavernosal smooth muscle causing inflow of blood into it.
Additionally, in the presence of hypoxia and acidosis, the contractile proteins in the Cavernosa such as Rho-Kinase are inactivated and cannot contract leading to an excessively relaxed cavernosal smooth muscle.
The pathological sequence of events following the onset of ischemic priaprism is as follows

- Interstitial edema
- Endothelial sloughing - both occurring in the first 12hrs
- With endothelial injury following sloughing, platelets adhere unto it causing micro thrombi formation
- Cavernosal infarction as a consequence of ischemia from micro thrombi formation
- Smooth muscle necrosis followed ultimately by fibrosis

The American urologic association (AUA) and the European association of urology (EAU) have published guidelines on the best course of treatment of ischemic priaprism
Both recommended a stepwise escalation of treatment beginning with

- Aspiration with or without irrigation followed by

- Injection of sympathomimetics followed by
- Surgical shunting and finally
- Insertion of penile prosthesis

From our experience, patients came much later than 24hrs, and therefore Aspiration, Irrigation and sympathomimetics even though employed, were not found to be useful.
In a similar work by Ugwumba etal, the incidence of ED was found to be 46.7% while we had ED incidence of 80%.
In their work, they had a much higher incidence of sickle cell patients with ischemic priapism. (53.3%)
In a similar work in South West Nigeria by Badmus etal, Sickle cell disease accounted for 87.5% of Cases.
They found out that late Presentations and previous episodes were associated with poor Prognosis with Higher risk of impotence. And that conservative management with aspirations and sympathomimetics appeared ineffective in late cases.
Another work by Muhammed etal in Zaria, Northern Nigeria showed that priaprism is a disease of the young, mostly sickle cell Anemia patients.
Late presentation was found to be the norm in their environment, Hence higher incidence of ED.
Other works by Rolland etal at the University Teaching Hospital Brazzaville, Central Africa, showed that priaprism represented the fourth cause of admissions into the emergency department and sickle cell was the major cause of priaprism. They also found out that medical or conservative management was effective for patients presenting before 12 hours while surgical management resulted in good outcomes in most of the patients who presented after 36 hours.
In our study, we had two patients (20%) who admitted to the use of herbal preparations to enhance erections.
Saffon Cuartas etal, in their own work, found that some patients developed priaprism when on treatment for erectile dysfunction (ED). Therefore, priaprism may present as a result of drugs taken for the treatment of ED or enhancement of erection.
According to Pryor and Hehir 1982, Ischemic priaprism lasting more than 24hrs results in ED rates as high as 90% This ED is due to the duration of ischemia to the corpora Cavernosa and the degree of ischemia is a function of the number of Emissery veins involved and the duration of occlusion.

V. CONCLUSION

Ischemic priaprism though an uncommon urological emergency, was found to be fairly common in our environment.
Sickle cell disease and the use of sex enhancing drugs and herbal preparations played a significant role in its occurrence.
Late presentation is still common place and is responsible for the high incidence of ED.
Distal shunting procedure (ALGORAB) was found to be the most effective modality of treatment.
Enlightenment is highly recommended especially to medical personnel, to quicken referrals to specialist centers.

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