

Priapism: an appraisal of surgical treatment

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Summary

The surgical outcome in 66 patients with priapism who presented at the University College Hospital, Ibadan, over a ten-year period was evaluated. Operative procedures carried out included bilateral cavernostomies in 23 patients, caverno-glandular shunts in 11, caverno spongiosal shunt in 18 and caverno-saphenous shunt in 1. Complete detumescence was achieved immediately post-operatively in all patients, however, this was not maintained. Some turgidity recurred after twenty-four hours in all patients. In 12 patients with recurrence of turgidity, 8 had flaccid penis after. Long-term results and follow up in these patients are scanty due to default, but of the 12 that were followed up for a period ranging from 2 months to 2 years, 6 are still able to achieve and maintain an erection, while 6 had no erection at all. Two of five patients who had conservative treatment are able to achieve and maintain an erection. The outcome of surgical treatment appears to be superior to conservative treatment. Bilateral cavernostomies appear to be effective, but when this fails a shunt procedure should be carried out.

Keywords: Priapism, Surgical outcome

Résumé

Le resultat chirurgical de 66 patients avec du priapisme qui s'étaient présentés au Centre Hospitalier Universitaire, d'Ibadan pendant une periode de 10 ans avait été évalué. Les procédures operatives performées incluient les Cavernostomies bilatérales chez 23 patients, les coupes caverno-glandulaires chez 11 et la coupure caverno-spongiosale chez 18 et la coupe caverno-sapheneuse chez l'un des patients. La detumescence complete avait été atteinte immédiatement post-operativement chez tous les patients. Cependant, cette tendance n'avait pas été maintenue. Certaines turgidités reapparurent apparmnt apres 24 heures chez tonts les patients. Chez 12 patients avec la trugidite recurrennte, 8 ont eu des pennis flacide. Les resultats à long terme et le suivie chez ces patients ont été rares due à des desertions. Des 12 patients, 6 y avait eu un suivie pour une periode se allant de 2 mois a 2 ans. Six ont été capable d'atteindre et de maintenir une erection, alors que 6 n'ont pas eu d'erection du tout. Deux des 5 patients qui avient eux des traitement conservatif avaient été capable d'atteindre et de maintenir l'erection. Le resultat du traitement chirurgical apparait être superieur au traitement conservatif. La cavernostomie bilaterale apparait être effectif, mais l'orsque celle-ci echoue, la procedure court-circuitage devrait être faite.

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Introduction

Priapism is an uncommon but disabling complication of sickle cell disease. It is marked by a painful failure of detumescence of the penis. It is not clear what biochemical or vascular events trigger off priapism, even though normal erectile capability is controlled by endocrinologic, hypothalamic and cerebral interactions [1,2,3]. The priapism caused by or associated with haematologic neoplastic disease may resolve with drug treatment of the primary condition. It has been documented that most children with sickle cell anaemia will respond well to non-invasive medical intervention, and more than half of adults will respond poorly [4]. Post-pubertal patients tend to have prolonged and recurrent episodes. With prolonged and repeated episodes, the cavernosa becomes fibrosed and hyalinized and blood no longer flows [5].

In adults, crucial treatment decisions must be made and implemented promptly within twelve hours because the time the patient is in priapismic state correlates with the presence of irreversible infarction and future dysfunction. There are claims for success in both conservative and or surgical management. The wide variety of conservative measures indicate that no one method of treatment is satisfactory, though surgical intervention usually resolves the priapism when conservative methods fail.

We have reviewed our cases of priapism that require surgical intervention at the University College Hospital, Nigeria, over a ten-year period and here present our findings.

Patients

This series comprised 66 patients admitted to the University College Hospital (UCH), Ibadan, during the period 1986 to 1996 with a diagnosis of priapism. They were aged between 5 and 45 years (mean 19.6 years); the peak incidence was in third decade. The underlying causes were as follows: haemoglobin SC disease 3 (3.8%), homozygous SS disease 48 (72%) cases. Three patients had the sickle cell trait (AS). In two cases there was no confirmation of the haemoglobin electrophoresis. One case was associated with chronic myeloid leukemia, one with uraemia and in ten cases no known causes were discovered and they therefore fell into the idiopathic group (Table 1).

Table 1: Underlying causes of priapism

Causes	No 66	%
HbSS	48	72.7
Hb S + C	3	4.5
Hb AS	3	4.5
CML	1	1.5
Uraemia	1	1.5
Idiopathic	10	15.2

There were nineteen patients in the first decade and fifteen in the second decade. There were twenty-four patients in the third decade, seven in the fourth and one in the fifth decade (Table 2).

Table 2: Severity of priapism

Symptoms	Total No. 66	%
Full brown	54	81.8
Moderate	9	13.6
Mild	3	4.5

The interval from onset of the priapism to presentation varied widely, while most patients presented late. Six patients presented in less than 24 hours of onset, while 27 presented between 24 and 48 hours of onset. Fourteen patients presented within 48 to 72 hours. However, 19 patients presented after 72 hours and at different intervals ranging from 6 days to 25 days.

Fifty-four patients presented with full-blown priapism. The clinical signs were of moderate severity in 9 while 3 were mild cases (Table 3).

Table 3: Age distribution of patients with priapism

Age	No. of patient
0-10	19
11-20	15
21-30	24
31-40	7
41-50	1
Total	66

Full-blown priapism refers to those cases in which the erect and turgid penis is pointing cephalad and the dorsum of the penis is touching or almost touching the anterior abdominal wall. In the moderate case the erect penis stands at right angle to the trunk and in the mild cases the turgid organ still makes contact with the scrotum. However a 25-year-old patient who had had several episodes in the past 5 years had a softish but monstrously enlarged penis. The operation for priapism in the last 4 years has been bilateral cavernostomies. In 21 out of 23 patients who had this operation, it was performed as the primary and sole procedure. Two other patients had cavernostomies for relief of priapism after failed shunt procedures. Previously in the earlier part of the series, shunt operations were the first choice. Bilateral cavernospongiosal shunts were established in 15 patients and unilateral shunts in 3 patients. Eleven patients had caverno-glandular shunt (Winters procedure). One patient had cavernosaphenous shunt on the left side. Conservative management was carried in 12 patients and 1 patient refused treatment.

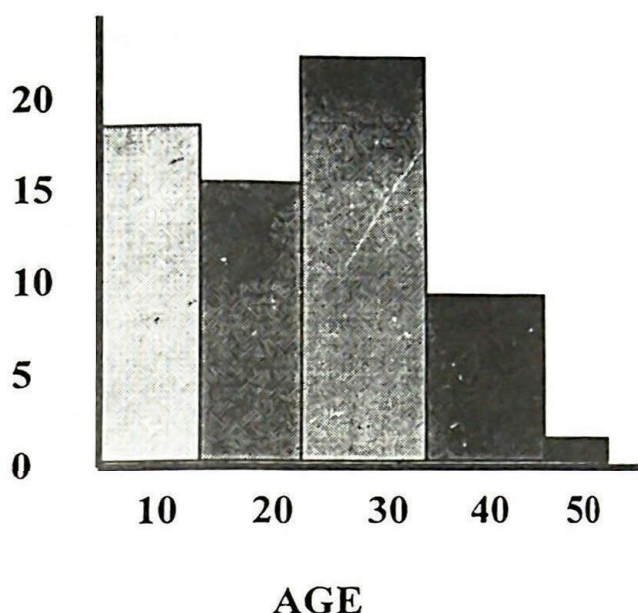


Fig. 1

Results

The immediate post-operative result was gratifying in the majority of patients. Complete detumescence was invariably achieved immediately after manual compression and evacuation of the tarry sludge, but this was not always maintained post-operatively. Some turgidity (or sometimes recurrence) remained for periods varying from 24 hours to 9 days. Of the 12 patients who had persistence of turgidity, 8 (66.7%) had a flaccid penis after and within 24 hours. Long-term results and follow up were scanty. Of the 12 patients followed up for periods ranging from 2 months to 2 years after operative treatment, six were able to achieve and maintain an erection, while six had no erection at all. Two of five patients who had conservative treatment were able to achieve and maintain an erection. It must be pointed out that these patients were a selected group in the sense that they included the mild and moderate cases in children. There were 2 deaths; one was in the immediate postoperative period. Autopsy did not reveal the cause of death. The other death was the uraemic patient who did not have the benefit of any form of treatment.

Discussion

In a population in which 4% have sickle cell disease and about 25% have the sickle cell trait; it is not surprising that 72% of the cases of priapism were associated with HbS disease. It is also remarkable that only 1 (2%) patient was in the fifth decade. (Table 4).

Table 4: Operatives procedures of patients with priapism

	No. of patients
Bilateral cavernostomies	23
Cavernospongiosal shunts	18
Conservative	12
Caverno-glandular shunts	11
Cavernosaphenous	1
No treatment	1
Total	66

A previous report from this centre had indicated that 3% of male children with sickle cell disease developed priapism [5].

Classification of priapism according to the degree of severity is relevant to the choice of method of treatment. In mild cases, particularly in children, conservative treatment with icepacks, sedation and analgesics is invariably successful, but with a tendency to recurrence at a later date [6,7,8]. Priapism of moderate severity often responds to conservative treatment, but conservative management should be abandoned in favour of surgical treatment if there is no response within 48 hours. The fully established or full-blown case is not only distressing, but unlikely to respond to conservative treatment [9]. Surgical relief is therefore the treatment of choice. For patients presenting early (within 24 hours) bilateral cavernostomies in the distal part of the penis almost invariably gives relief. When turgidity persisted, proximal cavernostomies with a shunt always gave relief. It is difficult to determine or assess the role of heparin either when administered locally or systematically because only 2 patients had this agent injected directly into the cavernosa. It might of course effectively prevent thrombosis in shunt operations where the saphenous vein is used. On the whole, surgical management is a more certain method of achieving relief and preventing fibrosis of the cavernous tissue which is apt to follow prolonged and repeated priapism [8].

The crucial test of success is whether or not the patient is able to achieve erection. Follow up of our patients has been poor because of a high default rate. Of 12 patients reviewed after surgical treatment 6 (50%) were able to achieve erection.

Six out of 12 (50%) patients reviewed after surgical treatment were able to achieve erection compared to 2 out of 5 (40%) patients who had conservative treatment. This result is similar to that of Fowler and colleagues [10]. Surgical treatment appears to be superior to conservative treatment, but the difference is not statistically significant. One patient in each of the surgical and conservative treatment groups had 'segmental' erection involving the proximal half of the penis. We can offer no possible explanation for this.

Our future policy would be to operate early preferably using bilateral cavernostomies; if this does not achieve lasting detumescence, a shunt operation will be added.

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