

Présentation du Volume 12 de la Revue Africaine de Médecine Interne
Overview of Volume 12 of the RAFMI (Revue Africaine de Médecine Interne)

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Ce volume couvre une variété de sujets essentiels dans le vaste domaine de la Médecine Interne, y compris, donc, les maladies auto-immunes, les maladies métaboliques, les maladies cardiovasculaires et d'autres conditions médicales spécifiques à divers contextes africains. Il est structuré en deux numéros, contenant des articles originaux et également des parcours diagnostiques trompeurs, d'une riche diversité géographique. Ces cas cliniques se concentrent sur des étiologies complexes et des défis médicaux. Ainsi, les pays concernés par ces productions scientifiques sont le Cameroun, le Sénégal, le Bénin, le Burkina Faso, la Guinée (Conakry), le Mali, la Côte d'Ivoire, le Niger et le Togo.

Les thèmes concernent principalement des anomalies du métabolisme glucidique et leur impact sur le risque cardiovasculaire, sur la sphère ORL (avec le pernicious SAOS ou syndrome d'apnée obstructive du sommeil), la survenue de l'insuffisance rénale, et par conséquent l'opportunité de l'éducation thérapeutique et de la contraception dans leur cadre. Les hémorragies périnatales et l'anémie ont été traitées, ainsi que la problématique des néoplasies et infections. Les articles ont également impliqué le contexte de travail libéral, ainsi que la qualité de vie des patients ayant d'autres problèmes endocriniens.

En résumé, le volume 12 de la *Revue Africaine de Médecine Interne* illustre l'engagement croissant des chercheurs et praticiens africains pour relever les défis sanitaires au niveau continental. Les travaux présentés offrent une plateforme cruciale pour le partage des connaissances et l'amélioration des pratiques cliniques en Afrique.

BONNE LECTURE

This volume covers a variety of essential topics in the broad field of internal medicine, including autoimmune diseases, metabolic disorders, cardiovascular diseases, and other medical conditions specific to various African contexts. It is structured in two issues, featuring original articles and diagnostic case studies with a rich geographical diversity. These clinical cases focus on complex aetiologies and medical challenges. The countries covered by these scientific publications are Cameroon, Senegal, Benin, Burkina Faso, Guinea (Conakry), Mali, Ivory Coast, Niger, and Togo.

The topics mainly concern carbohydrate metabolism abnormalities and their impact on cardiovascular risk, ENT issues (including the harmful OSAS or obstructive sleep apnea syndrome), the onset of kidney failure, and therefore the opportunity for therapeutic education and contraception within their framework. Perinatal haemorrhages and anaemia were addressed, as well as the issue of neoplastic and infectious conditions. The publications also covered the context of private practice, as well as the quality of life of patients with other endocrine problems.

In summary, volume 12 of the RAFMI illustrates the growing commitment of African researchers and practitioners to addressing continental health challenges. The presented studies offer a crucial platform for knowledge sharing and improvement of clinical practices in Africa.

HAPPY READING

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Early experience of penile prosthesis for erectile dysfunction in Senegal
Expérience initiale de la prothèse pénienne pour dysfonctionnement érectile au Sénégal

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Summary

Background: End stage erectile dysfunction (ED) may be managed successfully with a penile prosthesis. This is challenging in under-resourced/low-income African countries where such techniques remain novel especially in patients who have experienced priapism due to homozygous sickle cell disease. We aimed to determine the feasibility of penile implant surgery in Dakar, Senegal.

Methods: Over a ten-month period (March 2022 to January 2023), 9 patients underwent a penile prosthesis procedure for end-stage ED or complex Peyronie's disease at the Idrissa Pouye Hospital General. We prospectively recorded patient demographic and clinical data, including pre-operative and post-operative outcomes.

Results: The median age of patients was 51 years. The average duration of ED before surgery was 5 years. The cause of End-stage ED was priapism in 5 patients; this was secondary to sickle cell disease in 3 cases. Dense corporal fibrosis was present in 6 necessitating additional manoeuvres. A malleable prosthesis was used in all cases with an average operative time of 2 hours. Seven patients were discharged within 2 days. One patient required implant removal, at 45 days post-op due to erosion and infection. Patient satisfaction was high (87.5%).

Conclusion: Penile prosthesis is effective for the management of erectile dysfunction refractory to medical treatment. The semi-rigid malleable prosthesis is easy to insert intraoperatively. The technique is feasible in low-income countries. However, management is difficult in case of important corpora fibrosis due to prolonged priapism. Despite the challenges, satisfaction was high.

Keywords: Erectile dysfunction - Penile prosthesis - Priapism - Sickle cell disease - Senegal.

Résumé

Introduction : L'implantation de prothèses péniennes est une technique adaptée pour les patients souffrant de Dysfonction érectile réfractaire au traitement médical. Elle est à sa phase de début au Sénégal. L'objet était d'étudier la faisabilité et l'efficacité de la pose d'implant pénien au service d'urologie de l'Hôpital Général Idrissa Pouye de Dakar.

Patients et méthodes : il s'agit d'une étude descriptive portant sur l'analyse des premiers patients souffrants de DE ne répondant pas au traitement médical ayant subi une pose de prothèse pénienne entre mars 2022 et janvier 2023 au service d'Urologie de l'Hôpital Général Idrissa Pouye de Grand Yoff, Dakar. Nous nous sommes intéressés aux aspects cliniques, per et post opératoire. Nous avons réalisé des statistiques descriptives avec un seuil de significativité de 5%.

Résultats : Neuf patients ont subi une implantation de prothèse pénienne dont 2 en mars 2022 et 7 en janvier 2023. L'âge médian de patients était de 51 ans (Extrêmes 27 ; 67). 4 patients sur 9 étaient drépanocytaires homozygotes. La durée moyenne de la dysfonction érectile avant l'intervention était de 4,8 ans. Tous les patients ont eu une prothèse semi-rigide. La durée opératoire moyenne était de 123,3 minutes. La durée d'hospitalisation était de 48h pour 7 patients et 96h pour 2 patients. La complication infectieuse était présente chez un patient avec comme suite l'ablation du matériel prothétique. La satisfaction des patients était de 87,5%.

Conclusion : La pose de la prothèse pénienne permet de prendre en charge la dysfonction érectile irréversible au traitement médical. La prothèse semi-rigide a une facilité dans sa pose en per opératoire. La technique est réalisable dans notre contexte, cependant des difficultés sont notées en cas de fibrose importante secondaire à un priapisme prolongé. Le taux de satisfaction est élevé.

Mots Clés : dysfonction érectile - prothèse pénienne - Priapisme - Drépanocytose - Sénégal.



Introduction

Erectile dysfunction (ED) is the inability to achieve or maintain an erection sufficient for satisfactory sexual performance [1]. This has significant adverse effects on the physical and psychological health of a man and his partner(s) [1]. The incidence rises with age and may vary in different geographical populations. In a recent international study, the prevalence of ED was estimated to be between 37.2% and 49% in men 18 years or older [2]. The Massachusetts Male Aging Study (MMAS) was the first and largest study to investigate the epidemiology and causes of ED [3]. It described the risk factors for developing ED. Based on this study, the estimated global prevalence of ED is set to rise from 152 million in 1995 to 322 million by the year 2025 [4]. The greatest increases have been postulated as most likely to occur in economically challenged countries. The most common risk factors for ED in Western countries include diabetes, smoking, obesity and following pelvic surgery such as radical prostatectomy. However, in West African countries, this may also include ischaemic priapism (IP) especially in sickle cell disease (SCD).

Priapism is a sustained and painful abnormal erection lasting 4 hours or more in the absence of sexual stimuli. There are 3 types: the most common being IP which is a type of compartment syndrome which may lead to progressive ischaemia, hypoxia and corporal smooth muscle necrosis if untreated [5]. Complete necrosis may occur within 48 hours in untreated men resulting in long term irreversible ED [5]. The incidence of IP in the general population has been estimated to be 0.5-1.5 per 100,000 person years [5].

SCD is a common autosomal recessive disorder affecting the β -globulin chain of haemoglobin in mainly people of African descent [6, 7]. This reduces the oxygen carrying ability of haemoglobin resulting in recurrent episodes of occlusion in small vessels. It affects more than 3 million people worldwide predominantly in sub-Saharan Africa [6, 8]. Priapism has been reported in up to 40% of men with SCD with a cumulative incidence of 60% by the age 40 [5, 8]. Men with SCD also report worse erectile and sexual function [7, 8].

The treatment of end-stage ED and late presenting IP is with a penile implant which may be a malleable or an inflatable prosthesis. In appropriately counselled men, the satisfaction rates have been consistently reported as 70-80% [1]. However, surgeons must be well trained to achieve high rates of satisfaction amongst their patients and their partner(s). In Senegal, this surgery is in its infancy

and herein we present our initial experience at the Idrissa Pouye Hopital General (HOGIP) particularly in the context of countries with limited resources.

Materials and methods

Patients and data collection

We carried out a prospective audit of 9 men with end stage ED or complex Peyronie's disease who had a malleable penile prosthesis inserted between March 2022 and January 2023. All patients were operated at HOGIP, Dakar, Senegal. Demographic, clinical, operative, and peri-operative findings were collected prospectively from clinical records.

Surgical assessment and techniques

All men were admitted on the day of their operation and surgery was carried out with visiting experienced Andrologists. All patients received antibiotics (Gentamycin) on induction and the prosthesis was soaked in a Gentamycin solution prior to insertion. The malleable prosthesis inserted were Coloplast Genesis (Coloplast Corp, Minneapolis, MN, USA) or iMedicare Rigi10 (iMEDicare, Watford, UK). A standard 10-minute social wash was performed after shaving and prior to the first incision. All procedures were performed under spinal anaesthesia and the incision was penoscrotal. Hernia mesh was available and used in men with deficient tunica after corporal dilatation and excision. Patients were discharged after an overnight hospital stay with 1 week of ciprofloxacin and advised not to engage in sexual activity for 6 weeks.

Postoperative Outcomes

Patients were personally reviewed on post-operative days 7, 14 and 21. Satisfaction with the implant and sexual activity was assessed using the Erectile Dysfunction Inventory of Treatment Satisfaction (EDITS) which was administered at least 7 weeks from the surgery. The EDITS questionnaire is an 11-item validated tool assessing treatment satisfaction in ED [9].

Results

During the study period, we performed a penile prosthesis surgery on 9 patients including 8 de novo implantation and 1 change of prosthesis.

Patient characteristics

The preoperative characteristics of the patients are illustrated in Table I. Median age of our patients was 51 years (Range: 27-67 years). Most of the patients were married (n=5). The causes of ED were priapism (n=5), Peyronie's disease (n=3), and radical prostatectomy in one. Sickle cell disease was the cause of priapism in three patients. The average duration of ED before implantation of the prosthesis was 4.8 years (Range: 1-20 yrs).



Table I: Preoperative description of the 9 patients who underwent penile prosthesis implantation at HOGIP

N° Patient	Age (year)	Origin	Marital status	Etiology	Duration of ED (year)	History	Complaints
1	62	Senegal	Married	Peyronie's disease	1	-	Lack of erection
2	61	Italy	Married	Peyronie's disease	1	Diabetes, prosthesis surgery	Device failure
3	55	Senegal	Bachelor	Peyronie's disease	20	-	Lack of erection
4	32	Guinea-Equatorial	Married	Priapism	3	Priapism, spongy shunt-caverno	Lack of erection
5	27	Senegal	Bachelor	Sickle Cell Disease Priapism	3	Priapism, spongioca vernosal shunt	Lack of erection
6	28	Senegal	Bachelor	Sickle Cell Disease Priapism	2	Priapism, spongioca vernosal shunt	Lack of erection
7	67	Senegal	Married	Radical prostatectomy	5	-	Lack of erection
8	39	Senegal	Bachelor	Sickle Cell Disease Priapism	5	Priapism, spongioca vernosal shunt	Lack of erection
9	51	Senegal	Married	Priapism	3	Priapism	Lack of erection

Operative findings

The average duration of surgery was 2 hours. Dense fibrotic corpora cavernosa was present in 6 patients. This required adjunct manoeuvres including mesh insertion (n=5) and hitch sutures (n=2). Intra-operative perforation occurred in 2 patients. Complex anatomy was found in 2 patients (see figs 1 & 2). In one case, congenital hypoplastic distal corpora necessitated the roof of the distal corpora to

be punctured, to create adequate space for the implant. In another case, there was a swan neck deformity and small glans following a previous shunt for IP. The Coloplast Genesis was implanted in 8 cases; the most common implant size being the 11mm which was used in 5 cases. Due to the complexity of most cases, the local Urologists only performed two cases.



Figure 1: Hypoplastic distal corpora



Figure 2: Swan neck deformity

Results and complications

Our results are illustrated in Table II. The mean length of hospital stay was 2 days. The mean follow-up was 25 weeks (range 16-57 weeks). The operation was a complete success in 8 patients

(88.9%), with just one requiring prosthetic removal due to implant infection and erosion at postoperative day 45. Figure 3 shows comparison images of the patients with complex anatomy pre- and 6 months post-op.



Figure 3: Pre-operative and post-operative appearances (going from left to right).

Patient satisfaction

In our small case series, 7 patients were very satisfied with the prosthesis (88%). The prosthesis met patient expectations significantly in 5 patients and moderately in 3 patients. The use of the

prosthesis was very easy in 7 patients and only one reported that the use was difficult due to pain on mobilisation. Most patients (n=7) reported confidence in commencing sexual activity with the penile prosthesis.



Table II: Per and post operative description of 9 patients who underwent penile prosthesis implantation at HOGIP

N° Patient	approach	Type of prosthesis	Fibrosis of the corpora cavernosa during surgery	Intervention duration (min)	Complication	Follow-up time/week	Results
1	Penoscrotal	Malleable	Yes	70	-	16	Success
2	Penoscrotal	Malleable	Non	100	-	16	Success
3	Penoscrotal	Malleable	Non	120	-	16	Success
4	Penoscrotal	Malleable	Yes	150	-	16	Success
5	Penoscrotal	Malleable	Yes	180	-	16	Success
6	Penoscrotal	Malleable	Non	150	-	16	Success
7	Penoscrotal	Malleable	Yes	90	-	16	Success
8	Penoscrotal	Malleable	Yes	120	Infection	57	Material removal
9	Penoscrotal	Malleable	Yes	130	-	57	Success

Discussion

This small cohort of patients confirms the feasibility of implant surgery in Senegal with high patient satisfaction and an acceptable infection similar to what is seen in other high-risk populations [1, 10-12]. However, there are specific issues in these clinical settings including the management of well-established corporal fibrosis, the use of mesh for tunical reconstruction and the overall expense of the treatment.

Priapism is common in Senegal and constituted a large proportion of our study cohort. In most of these cases, the priapism was due to SCD, also common in Senegal. The usual management of men presenting with priapism in Senegal involves aspiration, the injection of an α -agonist and shunt. In the event of shunt failure, the patient would have no further options except the management of his subsequent ED with drug medications. Those have a low efficacy in these situations [13]. Current European and American guidelines advocate considering early penile prosthesis in those who have failed shunt surgery for priapism, and avoidance of shunt in men presenting beyond 24 hours of priapism. [1, 14]. IP is associated with time dependant corporal smooth muscle changes which determine the outcomes of shunt surgery. Zacharakis et al reported a potency rate of approximately 100% in men achieving detumescence if they were referred within 24 hours [15], increasing to 75% developing moderate to severe ED when referral occurred 24-48 hours and 100% ED rate in presentations over 48 hours. Bennet et al presented very similar results in men with IP due to SCD [16]. This has resulted in

contemporary practice of early implant surgery in men with late priapism or who have failed shunt surgery. This avoids the development of corporal fibrosis which is associated with increased implant complications such as infection, erosion, revision, and reduced patient satisfaction [11, 12]. The challenges in Senegal involve the lack of public knowledge around priapism especially in men with SCD, their subsequent late or absent presentation for medical attention and the need to change their current practice to be in line with European and American guideline - this would aid training and improve patient outcomes [17]. However, this may not be practical until sufficient easier cases have been performed with a trainer i.e., in Peyronie's or post-prostatectomy cases. Currently, IP cases is associated with extreme challenges for even experienced implant surgeons and therefore do not allow for training.

We found that a significant number of the cases (n=7) performed had corporal fibrosis which required adjunct techniques including backward cutting scissors, second incisions, extensive corporotomies and the use of mesh to close the tunica. We used sterilised mosquito net mesh to facilitate tension-free tunical closure (see fig. 4). This low-cost prosthetic mesh has been tried, tested, and audited in many African countries in the repair of inguinal hernias [18-22]. When compared to expensive commercial prosthetic mesh, there is no real difference in material characteristics with data from 5 randomised controlled trials (7 032 repairs) documenting a very favourable (0.65%) rejection rate in local populations [21]. Although there is heterogeneity in the many commercially available mosquito-net meshes, we used a sterilised non-



insecticide impregnated mesh donated by a colleague working with Hernia International, a UK based charity (www.herniainternational.org.uk) [19, 20]. In terms of its use in aiding tunical closure, we found the mesh very “surgeon-friendly”; it was soft, pliable, and handled well. In addition, it was a cost-effective adjunct, and we believe this to be the first description of its use in Andrological surgery.

The cost of the penile implant may be challenging in low economy countries and similar to the prosthetic mosquito mesh, low-cost alternatives may be needed. The Shah penile implant (G. Surgiwear, Rasoolpur, UP, India) is the most used implant in India over the last 20 years [23]. It is associated with high patient satisfaction, good concealment, and low infection rates [24]. In addition, it has been implanted in a wide variety of patient populations including IP. Each implant package consists of a pair of implants, 3 pairs of rear tip extenders and 1 plastic adapter to help to trim the proximal part of the prosthesis. Each implant has removable sleeves which can be removed via a circumferential incision to change the diameter of the implant [23, 24]. In addition, the implant can be shaved to narrow it selectively to allow tunical closure without using mesh. Finally, it is currently the cheapest penile implant available. Overall, this may make it the preferred implant in cost conscious settings.

Conclusion

Penile prosthesis is effective for the management of erectile dysfunction refractory to medical treatment. The semi-rigid malleable prosthesis is easy to insert intraoperatively. The technique is feasible in low-income countries. However, management is difficult in case of important corpora fibrosis due to prolonged priapism. Despite the challenges, satisfaction was high.

Authors does’nt declare any conflict of interest.

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