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Original Research Article

Practice of the use of oral mucosa graft urethroplasty among Nigerian urologists

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ABSTRACT

Background: Urethral stricture is an ancient disease that has plagued men. Management of this disease has been evolving due to advances in technology and better understanding of the pathogenesis. Use of oral mucosal grafts for substitution urethroplasty has been gaining world-wide acceptance and application by urologists. This article examines the of application of this urethral substitute among Nigerian urologists.
Methods: This was a questionnaire-based study administered to urologists during the annual general meeting and scientific conference.
Results: Forty two respondents completed the questionnaire and comprised of 41 (97.6%) males and 1 (2.4%) female. There were 24 (57.1%) consultants, senior registrars and others 4 (9.6%). Thirty three (78.6%) of the respondents had practised for less than 10 years. Region of practice in Nigeria were 13 (31%) in South-west, 5 (11.9%) in South-East, 3 (7.1%) in South -South, 9 (21.4%) in North-West, 10 (23.8%) in North-central and 2 (4.8%) in North-East. Annual volume of urethroplasty was less than 10 in 19 (45.2%) and only 3 (7.1%) performed more than 30 urethroplasties. Place of practice was mainly in the University Teaching Hospital 33 (78.6%). Oral mucosa grafts (OMGs) used either alone or in combination with penile flaps was used by 30 (71.4%) respondents while 11 (26.2%) used only penile skin flaps. Up to 10 (23.8%) of the respondents indicated desire to undergo training on the use of OMG for urethral reconstruction.
Conclusions: Use of OMG is accepted by Nigerian urologists, however application is limited by low annual urethroplasty volume and lack of training.

Keywords: Practice, Oral mucosa grafts, Urethroplasty

INTRODUCTION

Urethral stricture refers to the abnormal narrowing and loss of distensibility of the part of the urethra that is surrounded by the corpus spongiosum.[1] It is an ancient disease that has plagued men from the dawn of human history.[2,3] It is a cause of lower urinary tract symptoms in men less than fifty years as well as being responsible for reduction in the quality of life in the affected subjects.[4] Management of urethral stricture disease has been evolving over the decades due to better understanding of the pathogenetic mechanisms, advances in technology, better understanding of tissue transfer techniques and the emerging sub-specialization in reconstructive urology. However, the choice of the optimal treatment modality for urethral stricture depends on the aetiolgy, location, the length, the number, whether complete or incomplete, degree or severity of spongiofibrosis, the quality of the residual urethral plate and importantly, the training, experience and preference of the urologist. Options for treatment of urethral strictures range from urethral dilatation, to a variety of endoscopic procedures including direct vision internal urethrotomy (DVIU) and open reconstructive surgeries.

Urethral dilatation is the oldest method of treating strictures using a variety of methods such as balloon dilatation, filiforms and followers, urethral sounds or self-dilatations with catheters.[5,6] Dilatation aims at dynamically stretching the scar tissue in order to restore normal luminal calibre by epithelization without producing more scarring.[7] The procedure is less invasive, can be carried out in the office as an out-patient procedure, under local anaesthesia thus, making it cheap. However, it is hardly curative and suffers from high recurrence rates especially in improperly selected cases.[8]

Direct visual urethrotomy treats strictures by direct full thickness incision of the scar performed at the 12 o'clock position using an optical urethrotome.[9] Since its introduction into urology practice, DVIU has demonstrated a great appeal to the patients and practitioners due to its relative ease of performance, minimal resource requirement and short hospital stay.[10] The procedure may be carried out under a variety of regional and local anaesthetic techniques including spinal, local anaesthesia and its modifications.[11] In properly selected patients and in well trained hands, DVIU has been found to be effective and dependable in treatment of short segment bulbar strictures with minimal spongiofibrosis.[12] However, this procedure suffers from disappointing poor long-term results due to the often stricture recurrences especially for re-do procedures following the second previous attempts, long-segment strictures as well as in the presence of severe spongiofibrosis.[10,13]

Despite the apparent advantages of dilatation and endoscopic management of urethral strictures, urethroplasty is the gold standard treatment due to its better long-term success rate and this is much improved if there was no prior attempt at DVIU.[14]

The techniques for open urethroplasty include end-to-end spatulated urethral anastomosis for short-segment bulbar strictures and substitution urethroplasty either in one-stage or multi-staged urethral reconstruction.[14] The technique chosen depends on the stricture location, length, quality of residual urethral plate as well as the training, experience and preference of the surgeon. Excision and end-to-end urethral anastomosis gives a good outcome for short-segment bulbar strictures especially of traumatic aetiology.[15]

For the treatment of more complex strictures in which end-to-end anastomotic urethral reconstruction is not possible or may result in poor cosmetic and functional outcomes, a number of substitute tissues have been employed such as scrotal skin flaps, various modifications of penile island fascio-cutaneous flaps and extra-genital grafts from the bladder mucosa, colonic mucosa, tunica albuginea, tunica vaginalis and saphenous vein graft.[16-22] In the last three decades, there has been a resurgence in the use of extragenital grafts and oral mucosa grafts (OMGs) have been gaining increasing application and acceptability as suitable urethral substitute tissue for repair of complex strictures either as single or multi-staged urethral reconstructions.[23,24] Oral mucosa refers to the mucosal lining of the oral cavity and consists of: buccal (over the cheek); labial (the lip); and lingual (the lateral and under-surface of the tongue).[25] Current opinion among several urethral reconstructive surgeons have come to regard OMGs as the gold standard tissue for urethroplasty.[26]

Despite the world-wide popularity of the use of OMG in urethral reconstruction, there is scarcity of literature on its application by Nigerian urologists except for few cases series that have been published.[27,28]

This study aims at evaluating the practice of use of oral mucosa urethroplasty among Nigerian urologists with a view to find reasons for the low publication rates of this surgical procedure.

METHODS

This was a questionnaire-based study that was used to obtain data from urologists that attended the 24th Annual General Meeting and Scientific conference of the Nigerian Association of Urological Surgeons (NAUS) conference 2018 which held at Sokoto, Nigeria.

Data obtained included demographic variables, rank of the respondents, years of urology practice, each surgeon's choice of substitute material for urethroplasty and where OMG is not used, the reason for not using it among other variables. The data obtained was entered using Excel and then exported to SPSS 20 for analysis. The results were expressed in percentages.

RESULTS

Of the forty two respondents, 41 (97.6%) were males while 1 (2.4%) was female. The age range of the respondents was between 34 and 55 years with a mean age of 41.4. Majority of the respondents, 24 (57.1%) were consultants followed by senior registrars, 14 (33.3%) and others 4 (9.6%) as shown in Table 1. Majority of the respondents, 33 (78.6%) had practised urology for a period of 1 to 10 ten years. Other distribution of years of practice is as shown in Table 2. Most of the respondents, 13 (31%) practise in the South-West of Nigeria while only 2 (4.8%) respondents practice in North-eastern Nigeria. Majority of the respondents, 19 (45.2%) performed less than 10 urethroplasties per year for long segment urethral stricture while only 3 (7.1%) performed more than 30 urethroplasties per year for long segment disease. University teaching hospital is the place of practice of majority of the respondents, 33 (78.6%) while 2 (4.8%) practise in general hospitals and only 1 (2.4%) practice in a specialist hospital. The preferred substitute material is OMG alone, which is used by 17 (40.5%) of the respondents, 13 (31%) use combination of

flap and OMG while 11 (26.2%) use only penile skin flap as urethral substitute material. Of the 30 (71%) respondents that use OMG, 27 (90%) have practiced urology for not more than 15 years as shown in Table 3. Majority of the repondents, 9 (30%) that use OMG as urethral substitute practice in the North-western region, followed by North-central Nigeria, 7 (23.3%) as shown in Table 4. Of the 12 (28.6%) that do not use OMG, 6 (14.3%) said they have no training on its use, 2 (4.8%) said its non use was due to their preference while 1 (2.1%) considered it not good enough urethral substitute tissue. Up to 10 (23.8%) of the respondents indicated their wish to undergo training on the use of OMG for urethral reconstruction. Majority of the respondents, 23 (54.8%) harvest the OMG themselves, 9 (21.4%) using two teams of surgeon; one team harvesting the grafts while the other team proceed with the urethral dissection. Lastly, 29 (69%) of the respondents said that they will teach, recommend and encourage their urology trainees to practice use of OMG for urethroplasty.

Table 1: Rank of respondents.

Rank	Number of respondents	Percentage (%)
Consultant	24	57.1
Senior registrar	14	33.3
Registrar	1	2.4
Senior medical Officer	1	2.4
Unspecified	2	4.8
Total	42	100

Table 2: Duration of practice of respondents.

Years of practice	Number of respondents	Percentage (%)
1-5	15	35.7
6-10	18	42.9
11-15	4	9.5
16-20	3	7.1
21-25	1	2.4
Above 25	1	2.4
Total	42	100

Table 3: Duration of practice versus use of OMG.

Duration of practice in years	Number of respondents that use OMG	Percentage (%)
1-5	10	33.3
6-10	14	46.7
11-15	3	10
16-20	1	3.3
21-25	1	3.3
Above 25	1	3.3
Total	30	100

Table 4: Region of practice vs use of OMG.

Region	Number of respondents that practice omg urethroplasty	Percentage (%)
South-West	6	20
South-East	3	10
South-South	3	10
North-West	9	30
North-East	2	6.6
North central	7	23.3
Total	30	100

DISCUSSION

All the respondents except one in this study were males confirming the male predominance in the surgical disciplines especially in the sub-specialty of urology as has been observed in the more developed nations of the world.[29] Documented reasons for the fewness of female urologists include but not limited to the misconception among medical students and younger doctors that urology is a male-specific specialty in addition to the paucity of potential female mentors and probably the fear of the excessive work-load and possible burn-out syndrome found among trainee urologists.[30] In our practice, there are much fewer women than males getting admission into medical schools and still much fewer enrolling into residency training in surgery. In a society still clinging much to traditional roles for the women folk, in addition to the fact that most of the urology patients are adult men, the scarcity of female urology specialists in our country is not surprising. The first female Nigerian urologist completed her residency in 2013 and since then a few other females have completed theirs also. This trend in which increasing number of females are entering and completing residency training in urology that was observed in this study has been earlier noted in Canada.[31]

The respondents were all within 34 and 55 years and this age bracket comprises of people who are still active in clinical service as they are all below the retirement age of medical doctors in Nigeria. Majority of the respondents were of the consultant cadre and being heads of their separate clinical units, their acceptance and application of any surgical technique will reflect the practice in their institutions as well as the training of the residents who are the future consultants. Majority of the respondents had been in urology practice for less than ten years and this can also explain their attendance in this conference which was preceded by a training workshop on urethral reconstruction. Younger urologists are more likely than older ones to be adventurous in seeking opportunities for learning and training.

The majority of the urologists in this study practised their trade in the teaching hospitals, with few in general hospitals and none in full-time private practice.

Concentration of specialists in the teaching hospitals in our country is due to better salaries, career progression, facilities, and presence of resident surgeons in training whose availability reduces the work pressure on the surgeon unlike the situation in the state-run general hospitals. The south-west region and north-central region of the country had the largest number of respondents despite the fact the conference held in the north-west. This could possibly be due to the fact that Sokoto has been a peaceful city in the midst of security challenges in other parts of the north but most importantly, there is a direct air link between Lagos and Abuja in the south west and North-central respectively to Sokoto, the venue of the conference.

The volume of urethroplasty surgeries is low in this study as only 7.1% of the respondents perform more than 30 urethroplasties annually. This low utilization of urethroplasty as a treatment option for urethral stricture disease is a worldwide phenomenon among urologists as documented in a similar studies from Nigeria, Kingdom of Saudi Arabia and the United States of America.[32-34] Probable reasons for the low volume of urethroplasty among urologists include poor training, the long learning curve of urethroplasty, the long duration of the procedures, and the requirement for general or regional anaesthesia for urethroplasty thus excluding very old and frail patients unlike in the less invasive direct visual internal urethrotomy and urethral dilatation which are usually done as day cases; sometimes under local anaesthesia has been earlier mentioned.[11]

The use of oral mucosal grafts as substitute tissue for repair of long segment urethral stricture is applied by 71.4% of the respondents either as the preferred tissue or in combination with penile fasciocutaneous flaps. However, 28.6% of the urologists do not use oral mucosal grafts in urethral reconstruction for strictures and reasons for their non-use include not liking it or some considered it not as being not good enough substitute tissue. It is important to observe that in this study, 90% of the urologist who apply oral mucosal grafts in the treatment of long segment urethral strictures are younger and have been in practice for 15 years and below and most of these urologists practise in the northern part of the country. The preponderance of northern urologists applying oral mucosal grafts in urethroplasty may be due to not only as a consequence of training in this technique but also due to the fact that strictures in this region are still much of the post-infectious aetiology which are usually longer and more complex unlike in the more urbanized southern region where the aetiologic pattern has shifted more to traumatic and iatrogenic causes.[35,36] Post-infective strictures mainly occur in the bulbar urethra, may be of long-segment; are usually associated with severe spongiofibrosis and thus not curable with DVIU or urethral dilatation, thus necessitating the need for the application of substitution urethroplasty.[4,10] The years of urologic practice of most of the urologists in this study who utilize OMG for urethroplasty coincides with the period when the use of this urethral substitute tissue was openly introduced into urologic practice in Nigeria during a training workshop in Sokoto. Subsequent conference presentations, review articles and book chapters from this centre have continued to push this procedure to national discourse and practice among urologists.[37,38] It can thus be inferred that the younger urologists in Nigeria are more receptive to learning new surgical skills and willing to apply innovative techniques unlike the older ones. The two-team approach to oral mucosa graft harvest and application was utilized by majority of the respondents as has been reported by Kulkarni et al.[39] This approach enables non-contamination of the urethral dissection site with oral microbes and ensures speedy surgery and thus lessening the duration of anaesthesia and patient positioning in the lithotomy position. The above measure may also reduce morbidity associated with prolonged surgeries and the surgical positioning.

Training in use of OMG for urethroplasty is still lacking among many Nigerian urologists. This insufficient training may be due to non-acceptance of this technique among the older urologists who are unit heads, mentors and examiners, thus limiting the training of residents under such consultants. However, there was an indication from the study of a readiness and willingness by some of the respondents to undergo formal training on use of OMG in urethraoplsty as well as being ready to teach this surgical technique to the trainee urologists.

CONCLUSION

Use of OMG for urethroplasty is an accepted procedure by Nigerian urologists, however its broader application is limited by lack of appropriate training, and low volume of cases. Organization of periodic hands-on training workshops in designated regional centres will increase the use of this substitute tissue for urethral reconstruction.

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