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UROLOGIC DAY-CARE SURGERY: SCOPE AND PROBLEMS IN A DEVELOPING COUNTRY

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Objective Due to the numerous economic and social benefits associated with the practice of day-care surgery, it is gaining widespread acceptance worldwide and across all specialties. We therefore determined the spectrum of procedures and the difficulties faced during implementation of day-care urologic surgery in a tertiary-care center in Nigeria.

Patients and Methods This was a prospective study of all consecutive urologic day cases seen at the urology unit of Jos University Teaching Hospital, Nigeria, from January 2003 to December 2004. A total of 270 patients aged between 2 weeks and 100 years (median 55 years) with a male to female ratio of 14:1 were seen during the study period. The parameters studied were the presenting symptoms, diagnosis, treatment modalities, anesthesia, complications and whether or not the patients were converted to be in-patients or readmitted after discharge as well as the reasons for such conversion or readmission. The statistical analysis was done using the Epi-info 2004 system, version 3.2.2.

Results The main conditions seen were urethral stricture in 89 (32.5%) patients, benign prostatic hyperplasia in 86 (31.8%), carcinoma of the prostate in 26 (9.6%), carcinoma of bladder in 15 (5.6%) and male infertility in 10 (3.7%) patients. The procedures carried out were mainly urethroscopy/urethrocystoscopy in 103 (38.2%) patients, visual internal urethrotomy in 48 (17.8%) and trucut prostatic biopsy in 33 (12.2%) patients. Sedation was used in 142 (52.9%), sedation and local anesthesia in 53 (19.7%), local anesthesia alone in 9 (3.3%), general anesthesia in 22 (8.1%) and other combinations or omissions in entry in 41 (15.2%) patients. Circumcision was performed on 3 neonates (1.1%) without anesthesia. There was a cancellation rate of 15.6% (n=42) mainly due to the inability of the patients to come (24 patients, 57.1%), inadequate materials in the theatre (9 patients, 21.4%), power failure (4 patients, 9.5%), strike action (3 patients, 7.1%) and financial difficulties (2 patients, 4.8%). We had a conversion rate to in-patients of 1.9% (n=5) for various reasons. No further complications or readmissions after discharge were encountered.

Conclusion Urethrocystoscopy is the most frequently performed procedure and urethral stricture the most common diagnosis in our day practice. Cancellation of cases and conversion to in-patients remain our major challenges. The education of patients and physicians, as well as the provision of adequate material and infrastructure are recommended in order to provide the maximum benefit from urologic day-surgery practice.

Key Words urologic, day-care, surgery

INTRODUCTION

Day surgery refers to a surgical procedure performed in an outpatient setting. The earliest fully documented experience was by Nicoll, a Glasgow pediatric surgeon who operated on over seven thousand children as day cases at the Royal Hospital for Sick Children between 1900 and 1908[1]. The practice of day surgery has since gained widespread acceptance, especially in the past two to three decades[2], and has been extended to urology[1], ophthalmology, ear nose and throat, general, hand and plastic surgery[1, 3, 4]. This trend is related to the numerous economic and social benefits attributable to the practice that include reduction of costs[1, 5, 6] as well as waiting lists , improved quality of care[1] and low community support

Table 1: Diagnosis in 270 Patients who had Urologic Day-Care Surgery

Diagnosis	No of Pts	%
Urethral stricture	89	32.9%
Benign prostatic hyperplasia	86	31.8%
Carcinoma of the prostate	26	9.6%
Carcinoma of the bladder	15	5.6%
Male infertility	10	3.7%
Ureteric obstruction	8	3.0%
Bladder stone	5	1.9%
Vesical schistosomiasis	4	1.5%
Others	27	10.0%
Total	270	100%

requirements[5]. The practice has also been found to be highly acceptable for the patients[7], especially for women who thus are spared longer hospital stays away from their families.

Crucial to the success of the practice of day surgery is the proper selection of patients, competent personnel, appropriate anesthesia and adequacy of materials and time. Importantly, there should be an effective communication between the patients and the surgical management team. In developed countries, the district nurses and general practitioners usually assist in routine follow up of the patients, thereby enabling early identification and management of any problems that may arise. An efficient health insurance scheme provides the finance necessary to make the practice efficient. However, in most developing countries like Nigeria, one or more of these components are either not available or are grossly deficient, with attendant problems.

A previous study of all surgical patients carried out in this center (Jos University Teaching Hospital, Jos, Nigeria) [8] identified the cancellation of cases as a major challenge with a cancellation rate of 36% which is higher than the rates of 19.3% and 10% reported in Lagos, Nigeria[9] and Quebec, Canada[10], respectively, though these latter two studies included children only.

In the present study we determined the types of cases performed and the challenges faced in all our urologic day-care patients at the Jos University Teaching Hospital, Jos Nigeria, with a view to improving the practice.

PATIENTS AND METHODS

This prospective study was carried out for two years (January 2003 - December 2004) at the Urology Unit of the Department of Surgery of the Jos University Teaching Hospital. This hospital is a tertiary health institution located in the North Central region of Nigeria.

Patients of all ages and sexes were clinically evaluated at the outpatient department. Basic investigations included hematocrit determination and urinalysis, especially for sugar and protein. Other investigations performed depended on the diagnosis. Excluded from day surgery were those who had a hematocrit of less than 30% or had severe concomitant medical illness necessitating in-patient care. The procedures were carried out under sedation with intravenous diazepam and pethidine or pentazocine, and local anesthesia consisted of intraurethral instillation of 8 to 10 mls of 1% or 2% lignocaine. All 270 patients who qualified for day surgery were enrolled.

The data obtained were information regarding age, sex, diagnosis, procedure performed, anesthesia, complication(s) and whether or not the patients were converted to be in-patients or readmitted after discharge and the reasons for such conversion or readmission.

The data were subsequently analyzed using Epi-info 2004 version 3.2.2 to obtain percentages, means, median and standard deviations.

Conversion rate was defined as the proportion of patients initially planned for day care who, for any reason, were admitted to in-patient care immediately after an operation, while *readmission rate* referred to the proportion of patients initially planned, operated on and discharged as day cases but who were admitted because of a complication developing at home.

RESULTS

Our main interest was to determine the types of cases done on outpatient basis and the problems encountered. In total, 270 patients were seen during the study period with

Table 2: Day-Care Procedures Performed in 270 Patients

Procedure	No of Pts	%
Urethrocystoscopy	103	38.2%
Visual internal urethrotomy	48	17.8%
Prostatic biopsy	33	12.2%
EUA*/bladder biopsy	16	5.9%
Urethral dilatation	16	5.9%
Testicular biopsy	9	3.3%
Bilateral total orchidectomy	8	3.0%
Others	37	13.7%
Total	270	100%

Table 3: Reasons for Cancellation of Urologic Day-Care Surgery

Reason	No of Pts	%
Absence of patient	24	57.1%
Inadequate material	9	21.4%
Power failure	4	9.5%
Strike action	3	7.1%
Financial problems	2	4.8%

a median age of 55 years (range 2 weeks to 100 years) and a male to female ratio of 14:1.

The majority of our patients (32.5%) was between 41 and 60 years old. The three main conditions seen were urethral stricture in 89 (32.9%), benign prostatic hyperplasia in 86 (31.8%) and carcinoma of the prostate in 26 (9.6%) patients (Table 1). The main procedures carried out were urethroscopy / urethrocystoscopy in 103 (38.2%), visual internal urethrotomy in 48 (17.8%) and trucut prostatic biopsy in 33(12.2%) patients (Table 2).

The procedures were carried out under sedation in 142 (52.6%), sedation and local anesthesia in 53 (19.7%), local anesthesia alone in 9 (3.3%), general anesthesia in 22(8.1%) and other combinations of anesthesia or omissions in entry in 41(15.2%) patients. Circumcision was performed on 3 (1.1%) neonates without anesthesia.

There was a cancellation rate of 15.6% (n=42) mainly due to the inability of the patients to come (24 patients, 57.1%) (Table 3).

We had a conversion rate to in-patients of 1.9 % (n=5); one patient each with severe urethral bleeding, urinary extravasation, anemia, scrotal abscess and for observation in a gravid patient (Table 3). There were no other complications or readmissions after discharge.

DISCUSSION

The aim of this study was to determine the types of surgical cases done on a day-care basis at a urology unit in a developing country and also to evaluate the main problems associated with this practice. Our results showed that urethral stricture was the major diagnosis (32.9%) and that urethrocystoscopy was the main procedure performed (38.2%) in the day-surgery setting. Cancellation of scheduled cases was the major problem with a rate of 15.6%.

The preponderance of urethral stricture may be due to the high incidence of gonococcal and non-specific urethritis in most developing communities which is usually not treated or is under treated by unqualified medical personnel or traditional herbalists. Prostatic diseases represented 41.4% of the cases seen and were found primarily in patients undergoing cystoscopy for benign prostatic hyperplasia and carcinoma of the prostate. This incidence may rise with improved awareness, a greater availability of diagnostic facilities and improved longevity.

As expected from the conditions commonly seen, urethrocystoscopy was the major procedure carried out. This may not be the case in many countries in the developing world where either the facilities or the expertise for endourology may not be available. Total orchidectomy for prostatic carcinoma was performed in 3.0% of patients. This is still a frequent practice in many developing countries due to late diagnosis and high cost or non-availability of drugs required for treatment.

The use of sedation and local anesthesia for most urologic day cases is recommended as it has been found to be feasible in the majority of our patients and not only reduces the costs but also facilitates early recovery from anesthesia.

A major problem encountered was cancellation of scheduled cases in 15.6% of patients, even though this incidence is lower than the cancellation rates of 36% and 19.3%, respectively, reported in two previous studies in Jos[8] and Lagos[9], Nigeria. It has to be noted, however, that the Lagos study was conducted on the pediatric age group. On the other hand, a study in Canada[10] reported a lower cancellation rate of 10%. A high cancellation rate may jeopardize the benefits of day surgery due to a waste of resources.

The major reason for cancellation in our study was the patients' inability to come for surgery (57.7%). This is similar to a previous study in Jos[8] where this same factor accounted for 62.7%. Patient-related factors were also the major reasons (62%) for cancellation in Lagos[9]. We could not determine the reasons for our patients not coming but this may be related to inadequate information and counseling or financial difficulties. Home visits by community nurses could assist in determining such reasons and have in fact been found to reduce cancellation rates by 75%[11]. While this may be ideal, it may be difficult to implement in many developing countries due to limited human resources and transport difficulties. Effective telephone services could also be utilized preoperatively as was done in the USA to reduce day surgery cancellation[12].

Nine (21.4%) patients were cancelled due to inadequate materials required in the theatre. Adequate materials should be made available in theatres and operation lists should be made manageable. Laundry and sterilization services should similarly be organized such that materials are available when required.

Four patients were cancelled due to power failure. This is a recurring situation in many developing countries. Hospitals should have sufficient power backup.

Two of our patients were cancelled due to financial difficulties. In Lagos, 10.5% of cancellations were for similar reasons[9]. An organized health insurance scheme and improved economy will make healthcare available and affordable.

It is imperative to ensure that the patients are adequately prepared pre-operatively, which includes ensuring an adequate hematocrit level. Although this was done in all our patients, one patient was converted to an in-patient due to anemia which developed in the long interval between scheduling for surgery and the day of surgery. This underscores the importance of patients being seen shortly before surgery. Although it has been shown by Macarthur et al[10] that having a pre-operative clinic was beneficial in this regard, this may be difficult in many developing communities due to limited human resources, facilities and time constraints.

We conclude that urethrocystoscopy is the most frequently performed procedure and urethral stricture the most common diagnosis in our urologic day practice. We also conclude that the cancellation of cases and conversion to in-patients remain our major challenges. Patient as well as physician education and provision of adequate material and infrastructure are recommended to reduce these so as to gain the maximum benefit from urologic day-surgery practice.

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RESUME

L'hospitalisation du jour en chirurgie urologique: Objectifs et problèmes dans un pays en voie de développement

Objectifs: L'hospitalisation d'un jour gagne l'acceptation répandue dans le monde et dans toutes les spécialités en raison de ses nombreux avantages économiques et sociaux. Nous avons déterminé la variété et les difficultés dont on a fait face pendant cette procédure dans un centre de soin tertiaire au Nigeria. **Patients et Méthodes :** Il s'agit d'une étude prospective de toutes les hospitalisations du jour consécutives en urologie vues à l'unité d'urologie de l'Hôpital Universitaire Jos, Nigeria, de janvier 2003 à décembre 2004. Un total de 270 patients d'un âge de 2 semaines à 100 ans (médiane de 55 années) avec un sexe ratio de 14/1 a été vu pendant la période de l'étude. Les paramètres étudiés étaient les symptômes présentés, diagnostic, modalités du traitement, anesthésie, complications et si ou pas les patients ont été convertis pour être hospitalisés ou ont été réadmis aussi bien que les raisons pour une telle conversion ou réadmission. L'analyse statistique a été faite utilisant le système Epi-Info 2004, version 3.2.2. **Résultats** : Les causes principales vues étaient la sténose de l'urèthre chez 89 patients (32.9%), hyperplasie bénigne prostatique chez 86 (31.8%), carcinome de la prostate chez 26 (9.6%), carcinome de vessie chez 15 (5.6%) et stérilité masculine chez 10 (3.7%) patients. Les procédures pratiquées étaient principalement des urèthroscopies / urèthro-cystoscopies chez 103 (38.2%), urétrotomie interne endoscopique chez 48 (17.8%) et biopsie prostatique au trucut chez 33 (12.2%) patients. La sédation a été utilisée dans 142 cas (52.9%), sédation et anesthésie locale chez 53 (19.7%), anesthésie locale seule chez 9 (3.3%), anesthésie générale chez 22 patients (8.1%) et d'autres combinations ou manque de notes sur la forme d'anésthésie chez 41 (15.2%) patients. Trois nouveau-nés ont été circoncis sans anesthésie. Il y avait un taux d'annulation de 15.6% (n=42) dû à l'incapacité des patients à venir (24 patients, 57.1%), matériel inadéquat (9 patients, 21.4%), panne de courant (4 patients, 9.5%), grève (3 patients, 7.1%) et difficultés financières (2 patients, 4.8%). Nous avions un taux de conversion de 1.9% (n=5) pour plusieurs raisons. Aucune complication supplémentaire ou réadmission après sortie n'ait été rencontrée. **Conclusions :** L'urétrocystoscopie est la procédure fréquemment réalisée et la sténose de l'urètre le diagnostic le plus commun dans notre hospitalisation du jour. L'annulation de cas et la conversion restent nos défis majeurs. L'éducation des patients et des médecins, aussi bien que les développements infrastructurels est recommandée pour promouvoir cette procédure.

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