

Patterns of Urology Practice In A Small Rural Hospital of Developing Country

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ABSTRACT

Objective: To delineate the urology experience in a small rural hospital.

Study design: Descriptive, observational study.

Place & Duration: Civil Hospital Mithi from July 2009-Jun 2012.

Material and Methods: The operative experience between July 2009 to June 2012, at District head quarter hospital in rural Tharparker was evaluated. Data of all urological cases at DHQ Hospital Mithi was collected on a proforma regarding age, sex, residence, diagnosis, category of operations, range of procedures by single doctor and complications. In all patients' basic laboratory tests like CBP, urine analysis, renal function was done, the X-ray & ultrasound studies were also done where ever necessary.

Results: Urologic procedures performed in total 851 patients. All were belonging to rural Tharparker with low socioeconomic status. Of 851 patients 750(88.1%) were male. Among the 851 cases 221 (26%) were children and 630(74%) were adults. The mean age of patients was 39.4 (range 3months to 85 years). In pediatric groups of 221 patients, 202(91.4%) were male. The five most frequent procedures in 851 cases were difficult urethral catheterization 213(25%), cystolithotomies 153(18%), circumcision and glans refreshing due to Balanitis Xerotica Obliterance (BXO) 127 (14.9%) Inguinal Hernioraphy 78(9.1%) and suprapubic cystostomies 53(6.2%). Open procedures performed in 818(96.1%) patients and endoscopic procedures performed in 33(3.9%) patients. Most common complications were wound infection 38(4.5%), hematuria 18(2.1%), scrotal hematomas 6(0.7%).

Conclusion: Patients in rural areas living with advanced and complicated urological diseases. Establishment of urological setup in rural hospitals is urgent need of developing country.

Key Words: District hospital urology, Rural urology, Small setup urology,

INTRODUCTION

A significant proportion in the Pakistan lives in rural areas. Yet these are the traditionally underserved in terms of surgical, urological and other medical specialties. As a result the urological practice at rural hospital is different than that of urologic practice at urban/ tertiary care hospitals.

The inability to provide adequately for the surgical needs in many low-income countries has received increasing attention in the global health community^{1,2}. One of the main barriers has been the shortage of surgical workforce³. Improving efficiency and quality of care in urologic practice continues to be of utmost importance⁴.

The range of urologic procedures performed at any one health facility depend largely on the prevalent disease burden, regional setting of practice, the availability of equipments with cutting edge technology and skills of urologic surgeon⁵. In source endowed regions of the world, urologic surgical conditions are mainly treated with minimally invasive procedures, in contrast to open extirpative and reconstructive procedures used largely in developing countries⁶.

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The volume and spectrum of urologic workload should be reported especially against the background of previously nonexistent urologic services. Few studies of similar nature mainly Japanese have been reported in literature like statistics on operations at department of urology⁷ and epidemiologic study of patients seen at a regional urology service during a year⁸.

MATERIAL & METHODS:

The current study is a descriptive & observational work carried out to evaluate the operative experience of single surgeon at District head quarter hospital in rural Tharparkar, from July 2009 to June 2012. Data of all urological cases at DHQ Hospital Mithi was collected on a proforma regarding age, sex, residence, diagnosis, category of operations, range of procedures by single doctor and complications. In all patients' basic laboratory tests like CBP, urine analysis, renal function was done, the X-ray & ultrasound studies were also done where ever necessary.

RESULTS:

Urologic procedures performed in total 851 patients. All patients belong to rural Tharparkar with low socioeconomic status. Of 851 patients 750(88.1%) were males and 101 (11.9%) females. Among these 851 cases, 221 (26%) were children and 630(74%) were adults. The mean age of patients was 39.4 (range 3months to 85 years). In pediatric groups of 221 patients, 202(91.4%) were males and 19(8.6%) were females (Table -1).

Out of 851 cases 390 (45.8%) were major urological procedures and 461 (54.2%) were minor urological procedures (Table-2). The five most frequent procedures out of 851 cases were difficult urethral catheterization 213(25%), cystolithotomies 153(18%), circumcision and glans refreshing due to BXO 127 (14.9%) inguinal hernioraphy 78(9.1%) and Suprapubic cystostomies 53(6.2%) (Table-3). Of total 851 procedures, 77(9%) were performed by medical officers includes difficult catheterization 66 cases, impacted urethral stones 6 and urethral dilatation 5 cases, while 774 (91%) procedures by single urologist. Of total 851 procedures 523(61.5%)

Table-1: Total Operations: 851

Emergency Procedures	328	38.5%
Elective Procedures	523	61.5%
Minimally Invasive Procedures	33	3.9%
Open Procedures	818	96.1%
Children	221	26%
Adults	630	74%
Males	750	88.1%
Females	101	11.9%

Table-2: Major & Minor Urological Procedures (n=851)

Procedure	No. of Case	%
Major Procedure (n=390)		
Cystolithotomies	153	39.2
Inguinal Hernia	78	20
Hydrocele	23	5.9
Uretrolithotomies	22	5.6
Diagnostic Cystoscopy	15	3.8
Obstructed Inguinal Hernia	14	3.6
Undescended Testis	13	3.3
Scrotal Abscess	12	3.1
Pyelolithotomies	12	3.1
Orchidectomy	11	2.8
Litholapaxy	08	2.1
Varicocelelectomy	07	1.8
Scrotal Trauma (Degloving Injury Due To Goat / Cow)	07	1.8
Optical Urithrotomy	06	1.5
DJ Removal	04	1
Open Prostatectomy	03	0.8
Vesicocutaneous Fistula Repair	02	0.5
Minor Procedure (n=461)		
Difficult Catheterization	213	46.2
Circumcision & Glans Refreshing due to BXO	127	27.5
Adult Circumcision Due To BXO	127	27.5
Children Circumcision Due to Primary Phimosis	31	6.7
Adult Glans Refreshing	09	2
Iatrogenic Rupture of Urethra (Suprapubic Cystostomy)	53	11.5
Urethral Dilatation	34	7.4
Impacted Urethral Stone (Push back, Diversion)	28	6.1
Female Urethral Dilatation (Senile Urethritis)	06	1.3

Table-3: Five Most Frequent Procedures (n=851)

Procedure	No. of Case	%
Difficult Catheterization	213	25
Cystolithotomies	153	18
Circumcision & Glans Refreshing due to BXO	127	14.9
Inguinal hernia	78	9.1
Latrogenic Rupture of Urethra (Suprapubic Cystostomy)	53	6.2

Table-4: The Common Elective & Emergency Procedures

Procedure	No. of Case	%
Elective Procedure (n=523)		
Cystolithotomies	153	29.3
Circumcision with Penile Horn Excision & Glans Refreshing	103	19.7
Inguinal Hernioraphy	78	14.9
Hydrocelectomy	23	4.4
Uretrolithotomies	22	4.2
Orchidopaxy	13	2.5
Pyelothotomies	12	2.3
Orchidectomy	11	2.1
Varicocelectomy	07	1.3
Emergency Procedure (n=328)		
Difficult Urethral Catheterization	213	64.9
Suprapubic Cystostomies	53	16.2
Emergency Circumcision	25	7.6
Impacted Urethral Stones	28	8.5
Obstructed Inguinal Hernias	14	4.3
Scrotal Abscesses	12	3.7
Scrotal Trauma with Degloving injury by Animals (Goat)	07	2.1

were elective and 328(38.5%) were emergency procedures. 630(74%) procedures were performed in adults and 221(25.9%) in children. The most common major surgical procedure in adults was circumcision and glans refreshing, inguinal hernioraphy and percutaneous suprapubic cystostomies. While in pediatric group cystolithotomies and impacted urethral stones were most common. The most common elective procedure was cystolithotomies 153(29.3%),

while commonest emergency procedure was difficult urethral catheterization in 213 (64.9%) cases (Table-4).

Open procedures performed in 818(96.1%) patients and endoscopic procedures performed in 33(3.9%) patients. Of total 851 procedures only 38(4.4%) for upper urinary tract and 813(95.5%) for lower urinary tract and groin. Among which most common were 622(76.5%) for groin, penis, urethra and scrotum and 191(23.5%) for bladder diseases. Most common complications were wound infection 38(4.5%), hamaturia 18(2.1%), scrotal hematomas 6(0.7%), & suprapubic leakage with readmission in 02 (0.2%).

DISCUSSION:

District Tharparkar is the most deprived rural region of Sindh Pakistan. It has the lowest human development index of all districts in Sindh⁹. The true urological access and requirement of rural districts hospitals of Pakistan is not precisely known. Little data available in review literature internationally and no data available nationally regarding urological procedures at remote and rural district hospitals. Floyd MS et al improving efficiency and quality care in urological practice continue to be of up most importance⁴. The results of our study are initiative to the current status of urologic diseases, access and requirements at rural setup. We performed 851 urologic procedures at small rural hospital. 80% of patients had procedures for advanced diseases like huge hernias, hydroceles, varicoceles, big bladder, ureter and kidney stones, advanced BXO with penile horn, disfigurement of penis. The reason of advanced diseases was poverty, illiteracy unable to reach surgical health facilities at distance of 300-600 km. The commonly affected group was young adult males of 18 years to 40 years. Muntaner et al reported higher prevalence of male consultation for urologic conditions¹⁰. Shadrach reported 0.7% females and 99.3% males among 858 urologic patient's procedures. In our study 88.1% were males and 11.9% were females. As compared to Shadrach high percentage of females is due to the endemic bladder stones in children in Tharparkar,

which developed in female children also. Shadrach OA reported the five most frequent procedures were difficult male urethral catheterization (n=186), hernioraphy (n=83), varicocelectomy (n=68), exploration for acute scrotum (n=64) and transrectal biopsy (n=60). In our study five most frequent procedures were difficult male urethral catheterization 213(25%), cystolithotomies 153 (18%), theurepatic circum-cision for BXO 127(14.9%), hernioraphy 78(9.1%) and percutaneous suprapubic cystostomies 53 (6.2%). These variations are due to the endemic bladder stones in children in this rural area of Pakistan. BXO cases incidence and prevalence is also high in this area and uncircumcised, illiterate peoples with poor personal hygiene and history of animal sexual contact was main etiologic risk factors observed. Such variations in results urge strong need of different studies from rural and deprived areas of world. Sani R et al¹¹ In Niger a hernia repair is the most common gastrointestinal surgery, in nearly one of two patients Shadrach OA reported most common elective procedure were hernioraphy (n=83) and varicocelectomy (n=68), and most common emergency procedures were male urethral catheterization (n=186) and exploration for acute scrotum (n=64), while Bobo Diallo A et al¹² reported most frequent emergency urologic procedure were instillation of urethral catheter(55.25%) & suprapubic catheter(24.14%). In our study common elective procedure were cystolithotomies 153(18%), therapeutic circumcision for BXO 127(14.9%) & hernioraphy 78(9.1%), while emergency urologic procedures were urethral catheter instillation 213 (25%), suprapubic catheter 53 (6.2%) & impacted urethral stones in 28(3.3%) cases, matches with the results of Fall B et al¹³ reported most frequent urological emergency was acute urinary retention and most frequent operative procedure was instillation of suprapubic catheter (59.8%). Shadrach OA performed open surgery in 828 (96.5%) cases and minimally invasive procedures in 30(3.5%) cases, because of lack of instruments and consumables available for uroendoscopic surgery. Our study results are almost same open procedures in 818 (96.1%) and minimally invasive in 33(3.9%)

procedures. Similarly the small percentage of endourologic procedures was due to lack of instruments, and urological skilled medical staff. Shadrach OA five classes of surgical procedures alone accounted for close to 80 % (n=682) of all procedures performed. These were scrotal, penile, and urethral and groin. In our study of 851 procedures only 38 (4.5%) for upper urinary tract, while 813 (95.5%) for lower urinary tract includes bladder, urethra, penis, scrotum and groin.

Several audits have studied complications rates following day case surgery in a variety of specialties including urology^{14,15}. Raslan M et al¹⁶ reported the commonest causes of unplanned readmission after urological procedures were hamaturia 29(16%), acute urinary retention 28(15%) and uretric colic 25(14%) cases. In our study minor complications includes wound infection 38 (4.5%), hamaturia 18 (2.1%), scrotal hematomas 6 (0.7%), suprapubic leakage with readmission 2 (0.2%). Sani R et al¹⁷ in rural district of Dosso, there have been no deaths from elective surgery. Similarly in our study there was no death after elective or emergency urological procedures.

CONCLUSION:

Patients in rural areas living with advanced and complicated urological diseases. Establishment of urological setup in rural hospitals is urgent need of developing country.

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