



CLEAN INTERMITTENT CATHETERIZATION IN TRAUMATIC PARAPLEGIA PATIENTS THREE YEARS FOLLOW UP STUDY

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ABSTRACT

Ninety Six traumatic paraplegia patients with bladder involved were prepared in the technique of clean intermittent catheterization-self at D.P.M.R. K.G. Medicinal College Lucknow. Eighty were male and sixteen were female, fourteen patients must be stopped from the program for different reasons (ten males and four females) still hospitalized, although all proceeded on self-clean intermittent catheterization after release from the hospital and were followed up for a time of three years. The contamination rate amid self-clean intermittent catheterization is low and most welcome the upside of flexibility from waste pack, the provincial paraplegic is additionally saved of going for long separation for the hospital for changing or irrigation of blocked indwelling catheters frequently. However, the patients must be all around spurred and free to transfer and have the capacity to proceed indefinitely with such's program.

KEYWORDS :

INTRODUCTION

Sterile intermittent urethral catheterization has been utilized for quite a while as methods for starting administration of patients with neurological dysfunctions of the bladder since it was presented by GUTTMANN. Later on it was generally utilized as a bladder holding strategy amid the recovery period of patients with neurological illnesses who had been wearing FOLEY'S CATHETER. About 16 years back, Lapidés and his collaborators presented the idea of self-clean intermittent catheterization as a lasting strategy for exhausting the bladder of patients with different neurological dysfunctions.

In the paraplegia ward of D.P.M.R, K.G. Medical College, Lucknow (U.P), clean intermittent urethral catheterization is being utilized as a bladder holding method throughout the previous 3 years. An extensive number of patients in whom retraining procedure for clearing of bladder couldn't be created, were released with an indwelling self-holding catheter.

This gathering of patients confronted the best challenges as an expansive number of them were from provincial regions where even essential human services was not accessible and they needed to set out long separations to hospital for change of catheter or irrigation of a blocked catheter. This regular carrying from their town to hospital focus and back prompted improvement of pressure sores joined by extreme urinary tract infection. At last they arrive up at the inside as seriously sick patients. In view of these issues a self-clean intermittent catheterization program of neurogenic bladder has been begun in this centre.

MATERIALS AND METHODS

We started utilizing this strategy since first January, 2011 and from that point forward the ninety six traumatic paraplegia patients have been prepared in this system yet just eighty two of them have announced for general development and the present report portrays our involvement with seventy male and twelve female patients. In fourteen patients the preparation must be ceased in the middle because of different reasons.

All the traumatic paraplegia patients with bladder dysfunction, who could utilize the hands freely, were considered for this preparation. Notwithstanding, a few patients must be rejected at the beginnings by virtue of obesity or serious autonomic dysreflexia.

Every one of the patients in this arrangement was at that point hospitalized and all were wearing Foley's indwelling catheter for a variable period running from three weeks to two months. No urodynamic studies were directed to formally characterize the bladders, as the belief system behind the examination was to give the self-clean intermittent catheterization as a perpetual technique for evacuation for both sorts of bladder.

The self-intermittent catheterization program was begun simply after urine of the patient was discovered sterile on three consequent cultures with urine having less than 100 CFU/ml with less than 5 WBC/HPF of spun urine.

The Foley's catheter was expelled in the morning on the first day and urine was sent for urine investigation and culture. Nine went by the patient and trained the patient on the system to be taken after. The patient was likewise taught on liquid confinement and was given a liquid output record sheet making it compulsory on him/her getting it filled each time he or she purged the bladder or voids incontinently. The patient was then catheterized. In the event of female patient, the patient was set in a lithotomy position, and a mirror was set with the goal that patient could perceive what is being done.

After demonstration the patient was made a request to play out all ensuing catheterization himself or herself in bed under supervision, utilizing a perfect dry catheter (washed with cleanser and water) and lignocain jelly as lubricant. The patient's catheterization themselves four times each day at 6:30 A.M, 12 Noon, 6 P.M. and 11 P.M. The liquid admission was limited to 125 ml for each hour from 6:30 A.M. to 10:30 P.M. add up to 2000 ml for every day.

Twenty patients had reflex detrusor action and were treated with Imipramine hydrochloride 75 mg for each day for week, the measurements of the medication was balanced by the need of the patient.

Every one of the patients had sterile urine toward the begin of self-clean intermittent catheterization program, urinary diseases have been treated with a particularly showed antibacterial medication before beginning the preparation program. No antibacterial medication was utilized as prophylactic amid the treatment unless the patient created indications of urinary tract infection.

Week after week culture and urine investigation with sediment examination were performed on every patients while in the hospital. Following release the patients went to the out-patients facility at an interim of eight to ten weeks. At the season of take after -up urine examination with sedimentation were performed for each situation. Also, patients were urged to go to the out-patient clinic or bring urine specimen, whenever in the event they had any signs of contamination i.e. loss of self-control or change in character of the urine. Six months after release, pyelogram and serum creatinine values were acquired.

OBSERVATIONS

Eighty two patients effectively finished the training and were released. Just eighty two (seventy male and twelve female) of them

announced for normal follow-up. The male patient ended up proficient capable in the strategy of self-catheterization on an average in one day and female became proficient on an average in seven days. Average remain of the patient after they ended up noticeably capable in the technique of self-catheterization was on an average of one month for other recovery reason.

There were no episodes of febrile urinary infection while the patients were in hospital or during the follow-up period.

TABLE 1. OUTCOME IN 82 PATIENTS OF TRAUMATIC PARAPLEGIA

NO OF PTS	TOTAL PERIOD OF CATHETERIZATION		NO. OF CASES DEVELOP BACTERIUREA	
	INDWELLING	SELF- INTERMITTENT	IN HOSPITAL	FOLLOW-UP
4	4-8 weeks	60-70 weeks	2	3(1)*
3	4 weeks	60-70 weeks	2	2(1)*
3	4-8 weeks	50-59 weeks	-	3
5	4 weeks	50-59 weeks	3	4(1)*
3	4-8 weeks	40-49 weeks	2	3(2)*
6	4 weeks	40-49 weeks	4	5(1)*
3	4-8 weeks	30-39 weeks	1	3(1)*
5	4 weeks	30-39 weeks	3	2(2)*
5	4-8 weeks	20-29 weeks	1	4(1)*
5	4 weeks	20-29 weeks	3	5(1)*
9	4-8 weeks	10-19 weeks	2	3
12	4 weeks	10-19 weeks	1	4(2)*
11	4-8 weeks	0-9 weeks	2	2
14	4 weeks	0-9 weeks	1	3(1)*

*The no in brackets are those patients who developed bacteriurea more than once.

Table II. ANTIBACTERIAL GIVEN TO PATIENTS ON SELF-INTERMITTENT WHEN THEY DEVELOPED SIGNIFICANCE BACTERIUREA

	LEO	NT	OF	OTHER
IN HOSPITAL	8	12	14	6
IN FOLLOW-UP	7	26	18	14

LEO - Levofloxacin 500mg once a day.
 NF - Nitrofurantion 50mg 12 hourly.
 OF - Ofloxacin 400mg once a day.

Amid hospitalization twenty eight patients out of eighty two who entered the investigation, created significant bacteriurea with more than 1 lakh C.F.U. /ml with more than twenty two KBC/HPF of spun urine. A 15 days course of particular antibacterial treatment was given for every disease case and there were no repeat aside from on account of moderately aged rather obese woman, who experienced two episodes of E. coli bacteriurea at intervals of 3 weeks.

In the present examination patients are available for follow up study about for a time of three months to two years. Fifty two patients were seen on routine for follow up visits to have significant bacteriurea; fourteen of the fifty two patients had two such occurrences.

Both in-hospital and the out-patients clinic, the most generally isolated organisms was E. coli lesser number of Proteus and Klebsiella and a segregated occurrence of Citrobacter bacteriurea.

Expansion of the ureter and pelvis of kidney was seen in two patients. Irregular catheterization was preceded in both the patients. On resulting visit pyelogram was repaired and a pattern towards standardization of the measure of ureter and pelvis of kidney was seen in both the patients. We have seen no urinary calculi

creating amid intermittent catheterization. Eight patients had a solitary occurrence of haematuria with no identifiable cause. Patients who were on abiding catheters for over three weeks had more rate of bacteriurea than the individuals who were on staying catheters for under three weeks.

DISCUSSION

This examination was considered on the theory proposes by Lapidis et al that most instances of urinary tract infection are because of some under-lying basic or useful variation from the norm of the urogenital tract which prompts diminished imperviousness to tissue to bacterial attack. The uro-thelium or renal parenchyma can be influenced through harm to its basic trustworthiness by neoplasma, calculi, and remote bodies, for example, inlying catheters, traumatic instrumentation et cetera. Be that as it may, the most widely recognized reason for expanded increased susceptibility to bacterial invasion is decreased blood flow to the tissue. Blood flow to the bladder can be reduced by expanded intravesical weight as well as by over distension of the organ. The subsequent ischemic bladder tissue is then go to attacking gram negative creatures from the patients possess gut by means of the hematogenous or lymphogenous course. Transient bacteraemia is accepted to be a typical marvel is solid people. In the female patients poor voiding, is the essential driver of cystitis though impediment is the main source in the male patients. Along these lines it can be gathered from our hypothesis that the support of a decent blood supply to the renal pelvis, ureter. Bladder and staying away from high intraluminal weight and over distension is the way to aversion of urinary tract infection. Residual urine in itself and life forms evidently climbing through the urethra are of doubtful importance in the beginning of urinary infection. Result of the present study is quite in conformity of this theory.

The most commonly isolated organisms from the urine in the present examination and in addition in the investigation led by Elizabeth Joiner et al. Were E. coli, the basic finding gives advance belief to the speculation of Lapidis et al.

The system of self-irregular catheterization is anything but difficult to learn as in the present investigation, male patients took just seven days to wind up plainly capable. This reality has been all around stressed in the examinations conducted by Lapidis et al. also, by Elizabeth Joiner et al. The ease in learning the system lies in uncomplicated guideline and basic instrumentation. Sterile intermitted urethral catheterization as upheld by Guttmann never ended up noticeably prominent in India and this piece of world since it was trusted that insufficient doctors were accessible to play out the quantity of every day catheterization in the way recommended.

Less patients created bacteriurea with in the present arrangement when contrasted with the examination led by Elizabeth Joiner et al. It appears due to the fact that in her study all the patients were female only, but in the present the number of male patient is much larger.

Dilatation of ureter and pelvis of kidney were found in two patients in the present arrangement and them two demonstrated patterns towards standardization. As the subsequent our patients was short, our outcomes in such manner are not on a par with in the investigation by Elizabeth Joiner where the pyelogram come back to ordinary after a more extended development. A fascinating perception was that patients, who were on indwelling catheter for over four weeks, endured more with occurrence of bacteriurea in follow-up period. This perception is hard to clarify and might be because of lingering impact of the injuries which the bladder maintained during the period was on indwelling catheter.

The sole thought with we embraced to self-clean intermittent catheterization was to by one means or another mitigate our traumatic paraplegic patients of the issues confronted by them because of indwelling catheters. The critical diminishment in urinary

tract infection rate, which prompted lessening of the cost of antimicrobial medications from add up to cost of medicines was, be that as it may, an appreciated turn off. It cuts on the cost of anti-infection agents as well as spa-red these patients from frequents visits to far off primary health centres for change of catheters and irrigation of blocked catheters. The patient's acceptability of the method is high. Under Indian situation where countless paraplegia patients originated from traumatic zone, we feel that it is a genuinely decent technique to evacuation of bladder and control of huge number of urinary tract infection which create this condition. The patients are additionally calmed of conveying an indwelling catheters and drainage bag, making them more socially satisfactory.

CONCLUSION

Establishment of clean intermittent self-catheterization from the earliest starting point is rewarding. It helps in early restoration of paraplegics and is emphatically prescribed for use in the paraplegic centres. It lessens the urethral, bladder and renal confusion extensively and helps in building up the adjusted bladders at the earliest. It is not required for around three months and this chops down repeating uses on catheters and packs. It chops down the cost of delayed courses of anti-infection agents generally required in abiding catheters. It diminishes the work stack on the doctor's facility by getting rid of autoclaving of equipment. Aims of paraplegic bladder administration are in a perfect world accomplished by CISC.

REFERENCE

- Hanno, Philip M.; Wien, Alan J.; Markowitz, S. Bruce. (2001). *Clinical manual of urology*. McGraw-Hill Professional. P.78.
- Elroy D. Karsh (1987). *Urology: Problems in Primary Care*. Medical Economics Books. ISBN 9780874894196.
- Black, Mary Ann (1994). *Medical nursing* (2nd ed.). Springhouse, Pa.: Springhouse Corp. P.97. ISBN 0-87434-738-6. LCCN 94035389.
- Lam, TB; Omar, MI; Fisher, E; Gillies, K; MacLennan, S (Sep 23, 2014). "Types of indwelling urethral catheters for short-term catheterisation in hospitalised adults". *The Cochrane database of systematic reviews*. 9: CD004013. PMID 25248140. Doi:10.1002/14651858.CD004013.pub4.
- Royal Marsden Handbook of Clinical Nursing Procedure 6th ed., London. "Urinary catheters"
- . Medline Plus, the National Institutes of Health's Web site. 2010-03-09. Retrieved 2010-12-01.
- Hedland, H.; Hjelmås, K.; Jonson, O.; Klarskov, P.; Talja, M. (Feb 2001). "Hydrophilic versus non-coated catheters for intermittent catheterization.". *Scand J urolnephrol*. 35 (1): 49–53. PMID 11291688. Doi:10.1080/00365590151030822.
- Lapides, J.; Diokno, AC.; Silber, SJ.; Lowe, BS. (Mar 1972). "Clean, intermittent self-catheterization in the treatment of urinary tract disease.". *J Urol*. 107 (3): 458–61. PMID 5010715.
- Winder, A. (Nov–Dec 2002). "Intermittent self-catheterisation.". *Nurs Times*. 98 (48): 50. PMID 12501532. ^
- Best practices : evidence-based nursing procedures (2nd ed.). Philadelphia: Lippincott Williams & Wilkins. 2007. ISBN 978-1-58255-532-4. LCCN 2006012245. "Care for your catheter"
- . Retrieved 2008-09-12.
- Prieto, J; Murphy, CL; Moore, KN; Fader, M (Sep 10, 2014). "Intermittent catheterisation for long-term bladder management". *The Cochrane database of systematic reviews*. 9: CD006008. PMID 25208303. Doi:10.1002/14651858.CD006008.pub3.
- Neal D. Shorea, Martin K. Dineenb, ‡, Mark J. Saslawskyc, §, Jeffrey H. Lumberman and Alberto P. Corica (March 2007). "A Temporary Intraurethral Prostatic Stent Relieves Prostatic Obstruction Following Transurethral Microwave Thermotherapy". *The Journal of Urology*. 177 (3): 1040–6. PMID 17296408. Doi:10.1016/j.juro.2006.10.059.
- Guttmann, L. & Frankel, R., The value of intermittent catheterisation in early management of traumatic paraplegia and tetraplegia. *Paraplegia*, 4, 63-84.
- Elizabeth Joiner R.N., Experience with self-intermittent catheterisation for women with neurological dysfunction of the bladder. *Paraplegia* Vol. 20 Number 3, 147-153.