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Research Article

**COMPLICATIONS OF ULTRASONOGRAPHIC GUIDED
PERCUTANEOUS NEPHROSTOMY IN OBSTRUCTIVE
UROPATHY**¹Dr. Maheer Amjad, ²Dr. Arjumand Shaheen, ³Dr. Maira Shahid¹Shalamar Medical and Dental College²Shalamar Medical and Dental College³King Edward Medical University**Abstract:**

Background: This research is based on problems of ultrasound guided percutaneous nephrostomy in patients with obstructive uropathy.

Methodology: Total 184 patients offered with uremia due to unilateral or mutual troublesome uropathy in this study dual J ureteral stenting or retrograde catheterization can't be completed or else were selected. Patients with BOO, severe coagulopathies and liver or multisystem crash were expelled. In all patients, percutaneous nephrostomy has been done by ultrasound management through local treatment. Problems i.e. septicemia, bleeding and nephrostomy tube dislodgement or obstruction were noted.

Results: Age range in our experiment was 20 to 60 years with average age of 41.74 ± 7.91 years. Out of these 184 patients, 127 (69.02%) were men and 57 (30.98%) were women with men to women ratio of 2.23:1. Nephrostomy tube displacement or jam was most common problem of the practice and was seen in 09 (4.89%) patients. Septicemia was noted in 07 (3.80%) patients. Bleeding was noted in 04 (2.17%) patients.

Conclusion: In this research percutaneous nephrostomy (PCN) done by ultrasound has proved to be a very secure technique of temporary urinary diversion in obstructive uropathy.

Keywords: Hydronephrosis, nephrostomy, bleeding, blockage.

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INTRODUCTION:

Disruptive uropathy is one of the most common urological emergencies. This situation happens when urine flow jams, that results in high stress on the collecting structure, this harms to renal parenchyma. Disturbance in regular flow of urine results in ache, infectivity, and failure of renal routine working. This is very deadly dangerous situation; instant actions can be taken to decompress the kidneys. That difficulty causes inflammation in the urine region proximal to site of difficulty. Because of inflammation huge pressure is created that produces more ache and this might be the first sign of the obstacle. Twist in urine area and renal stoppage is produced; its sternness depends on level and length of obstacle. As soon as urine area is blocked, urine stasis might produce predispose to infectivity. When obstacle in the urine area wasn't detached, the patient's medical state will worse rapidly due to uremia, water-electrolyte abnormality and urine area infection and resulting decrease of awareness causes death.

A variety of modalities are existing for the temporary aid of upper urinary tract obstruction is traditional stinting, free flow of kidneys and Percutaneous nephrostomy. Percutaneous nephrostomy (PCN) is very popular treatment for urine flow in patients having upper urine area problem and for urine distraction in persons having urine fistulas, leak, shocking urethral analysis or hemorrhagic cystitis. The process can be done to obtain contact to the urine area for percutaneous stone exclusion and further endoscopic measures.

As stone illness has been the main found in this part of Pakistan, a high number of patients present with bilateral ureteric obstruction is because of stones or obstructed solitary functioning kidney. This study will help us to review the problem rate of ultrasound guided percutaneous nephrostomy in higher obstructive uropathy in local people, so that particular patients could be treated with an simple and secure process for urinary diversion in obstructive uropathy.

METHODOLOGY:

The case study took part in branch of Urology, Sahiwal Medical College Sahiwal from February 2016 to August 2016.

Inclusion Criteria:

- a. Patients with one-sided or joint disruptive uropathy as in this dual J urethral stinting or traditional catheterization can't be complete or else and offered by uremia.

- b. Patients of 20-60 years of age.

- c. Both male and female.

Exclusion Criteria:

- a. Patients with obstructive uropathy because of bladder outflow obstruction.
- b. Severe coagulopathies.
- c. Patients with liver or multisystem breakdown.
- d. Fatal illness in which position for PCN could not be bearable by patient

OPERATIONAL DEFINITIONS:

1. **Complications:** Following complications was noted from day of PCN insertion to one week.

- a. **Septicemia:** Characterized by a entire body inflammatory condition caused by severe infection and was deemed as positive if patient had fever or hypothermia (<36 C or >38 C), rapid breathing (>20/min), elevated heart rate (>90/min), confusion, and edema.

- b. **Bleeding:** Any macroscopic blood loss through PCN site after procedure which needed haemostatic agents and blood transfusion.

- c. **PCN dislodgement or**

Blockage: Accidental removal of PCN tube or blockage because of any debris or blood clot, necessitating reinsertion of PCN.

DATA COLLECTION PROCEDURE:

After agreement from local moral committee, a total of 184 patients admitted to Urology Department fulfilling the addition/omission criteria was chosen. Comprehensive history and all the baseline investigations were done in every patient. Then after taking informed written agreement and clearance of all the risks and other formalities of the process to the patients, percutaneous nephrostomy was done by ultrasound management with 5-10 ml of 1% lignocaine subcutaneously at pierce location. Problems i.e. blood loss, septicemia and PCN displacement or obstruction was found during or after the process up to one week. All this statistics were noted on a especially planned Performa which consisted of two parts. First part consisted of the person's personal information while second part consisted of study variables. Computer software SPSS 16th version was used to gather the information. To calculate mean and standard deviation quantitative variables were used like age. Frequency and percentage were designed for qualitative variables i.e. sex and complication (blood loss, septicemia and PCN dislodgment or blockage). Effect modifiers like age, gender and co-morbid condition like diabetes mellitus were controlled.

RESULTS:

Age sort in study started from 20 to 60 years with average of 41.74 ± 7.91 years. Percutaneous nephrostomy tube dislodgment or blockage was most frequent and was found in 09 (4.89%) patients. This was managed by redo percutaneous nephrostomy. Septicemia was found in 07 (3.80%) patients. Antibiotics and antipyretics were used to manage it conventionally. Bleeding was found in 04 (2.17%). (Table 1) Patients were separated into two age groups i.e. ages from 20-40 years and age group 41-60 years. There were 117 patients were in age group 20-40 years and 67 patients in age group 41-60 years. Septicemia was found in 05 (4.27%) patients and 02 (2.99%) patients correspondingly in age group 20-40 years and age group 41-60 years. Difference was not important ($P = 0.660$). Bleeding was noted in 02 (1.71%) patients and 02 (2.99%) patients but the distinction was

statistically not important ($P = 0.568$). PCN dislodgment or blockage was found in 05 (4.27%) patients of age group 20-40 years in 04 (5.97%) patients of age group 41-60 years but the difference was irrelevant ($P = 0.608$). Table 2.

Men were 127 and women patients were 57. Septicemia was found in 06 (4.72%) patients and 01 (1.75%) women patients but insignificant between gender and Septicemia was found with p value 0.330. Total 04 (3.15%) male patients and 00 (0.0%) female patients noted with bleeding. But irrelevant association of sexual category with bleeding was found with p value 0.176. PCN dislodgment or blockage was seen in 06 (4.72%) men and 03 (5.26%) women patients. But insignificant ($P = 0.876$) association was observed. Table 3

Table 1 Complications of Ultrasound guided PCN

Complications	Frequency (%)	
	Yes	No
Septicemia	07 (3.80%)	177 (96.20%)
Bleeding	04 (2.17%)	180 (97.83%)
PCN dislodgement or blockage	09 (4.89%)	175 (95.11%)

Table 2 Relation of complications with age

Complications		20-40 years (n=117)	41-60 years (n=67)	P-value
Septicemia	Yes	05 (4.27%)	02 (2.99%)	0.660
	No	112 (95.73%)	65 (97.01%)	
Bleeding	Yes	02 (1.71%)	02 (2.99%)	0.568
	No	115 (98.29%)	65 (97.01%)	
PCN dislodgment or blockage	Yes	05 (4.27%)	04 (5.97%)	0.608
	No	112 (95.73%)	63 (94.03%)	

Table 3 Relation of complications with gender.

Complications		Male (n=127)	Female (n=57)	P-value
Septicemia	Yes	06 (4.72%)	01 (1.75%)	0.330
	No	121 (95.28%)	56 (98.25%)	
Bleeding	Yes	04 (3.15%)	00 (0.0%)	0.176
	No	123 (96.85%)	57 (100.0%)	
PCN dislodgment or blockage	Yes	06 (4.72%)	03 (5.26%)	0.876
	No	121 (95.28%)	54 (94.74%)	

DISCUSSION:

We have conducted this research to study the issues with disruptive uropathy of ultrasound guided percutaneous nephrostomy in patients. In our study ages at first look diverse from 20 to 70 with average age of 41.74 ± 7.91 years. Most of the patients 78 (42.39%) were among 31 to 40 years of age. Furthermore, in our study, out of these 184 patients, 127 (69.02%) were men and 57 (30.98%) were women with male to female part of 2.23:1 this part is identical the researches of Naeem M et al, Wilson JR et al and Karim R et al who also got superior rate of male than female patients. Ahmad I et al in their study has establish the average age of 42.33 ± 9.65 years with 72.67% were male and 27.33% female with male to female ratio of 2.6:1. In our research, post-procedure bleeding found in 04 (2.17%) patients undergo nephrostomy cylinder situation. whereas Naeem M et al, Jalbani MH et al and Romero FR et al came to know its pace to be 4.0%, 5.0% and 3.5% correspondingly and that is more as compared to the research. However Karim R ET al¹³ and Olivera ST et al report a very soaring pace blood loss i.e. 9.5% and 21.5% correspondingly as compare to the research. After procedure cruelty of bleeding changes from time to time, and might begin from trouble-free brief hematuria to severe blood loss requiring transfusion or intrusion. Incidence after PCN septicemia in this research was in 3.80% (7 patients) while Naeem M et al¹¹ report the occurrence 2.0%, Dyer RB et al¹⁷ 2.5% and Jalbani MH et al⁹ found it 7.5% which was very high to our research. Those particular patients with managed conservatively in the ward which have blood loss and septicemia. Most frequent dilemma which Lewis found was sepsis, 2.2% in the research has seen this.

Catheter associated problems such as kinking, obstruction or dislodgement may often be seen and may need further intervention in 14% of cases. Available information quoted varying rates of catheter dislodgement, starting from 4.8% to 11.6%. The use of larger bore catheters (for example 14Fr catheter) may decrease this tempo to 1%. Stables suggested development of the catheter well into the renal pelvis or calyces to decreases danger of dislodgement.

CONCLUSION:

In this study we observed that the percutaneous nephrostomy (PCN) was secure and simple technique in brief urinary distraction in disruptive uropathy, the frequency of percutaneous nephrostomy dislodgment in 4.89% patients, Septicemia in 3.80% patients and

bleeding in 2.17% patients. It is suggested that percutaneous nephrostomy might be an appropriate and perfect modality for drainage of pyonephrotic and azotemic patients with least problems. Furthermore, ureteric obstacle mainly because of nasty sickness of pelvic cause is cured by PCN as a painkilling measure, if not it can be extremely serious.

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