

Conventional Percutaneous Nephrolithotomy (PCNL) Complications Rate in a Tertiary Care Center.

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ABSTRACT

Background: Assess The Complication Rate Of Conventional Percutaneous Nephrolithotomy In A Tertiary Care Hospital (PCNL).

Study design: A Retrospective observational study.

Place and duration of study: Department Urology Lady Reading Hospital In Peshawar, Pakistan, From 05-January 2016 To 05- January 2020

MATERIALS AND METHODS: The following research was carried out by the urologist department of Lady Reading Hospital in Peshawar, Pakistan, from January 2016 to January 2020. Four hundred thirty-nine individuals with normal-panel underwent the study. Before non-contrast, C.T. kub was done on all subjects. The patient was lying flat after the 6fr ureteric catheter was inserted in the lithotomy position. All prone procedures using 30fr am plating sheaths were directed by fluoroscopy. Hydraulic lithoclasts broke the stone. All nephrostomy tubes were foley devices with a 16-fr size. Six physicians performed these operations with four years of penal experience. Postoperative problems were evaluated using an adapted Cloven rating method.

Results: There were problems with 46.9%. 54 (12%) and (120) grade I and II clavier problems were discovered. 67 (15%) stage I patients with transient temperature were treated with antipyretics. 53 (12%) patients used supine pressure bands to treat nephrostomy site leakage. 9 (2%) of the grade II issues needed IV antibiotics for sepsis, and 45 (10%) required blood transfusions. Extended haemorrhage occurred in 4 (0.8%) patients who underwent percutaneous angioembolization and 6 (1.2%) patients who underwent perinephric collection drainage. One (0.2%) patient had a colostomy, and 24 (5.3%) patients with persistent nephrostomy leakage or PCS injury underwent D.J. stenting. I was alright with Intensity IV. 0.4% of fatalities were due to severe bleeding.

Conclusion: The procedure of percutaneous nephrolithotomy is economical, risk-free, and well-tolerated. Most of the time, minor problems like brief temperature and nephrostomy site leaks go away independently. The degree of complexity has been reduced to almost nothing due to the shrinking size of Pcnls from conventional to mini, ultra mini, and micro.

Keywords: Complications, Tertiary Care, Percutaneous Nephrolithotomy, Conventional, Pakistan

Authors Contribution

SU. Concept & Design of Study ,MA. Drafting,NH.Data Analysis,IA.Critically Review, AG,Final Approval of version

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Introduction:

PCNL was originally used for big renal stones in the 1970s and has been the technique of choice ever since ^{1,2}. In our globe region, urolithiasis affects 2-The Procedure Is Not Without Risk^{3,4,5}. The Overall Complication Rate Is 20.5 Percent. However, Most Of The Issues Are Mild^{6,7}. These Complications Are Graded Using A Modified Clavien Classification System⁸. Even Though 3% of the population and a lifetime chance of having a kidney stone is 13%. (3). A lower mortality and morbidity rate are more common with PCNL. However, This Grading System Has Its Flaws; it Has Been Thoroughly Tested And Is Widely Accepted. Complications May Now Be Graded Using This Method⁹.

Methodology:

This descriptive study was conducted at the lady reading hospital in Peshawar, Pakistan, from 2016 to 2020. The study comprised 449 participants with pcnl: preoperative ultrasound, x-ray, and non- contrast ct kub on all patients. The patient was prone after passing a 6fr ureteric catheter via lithotomy cystoscope. All surgeries were conducted prone under fluoroscopy supervision with a 30fr am Platz sheath. Stone fragmentation using pneumatic lithoclast. All instances

They used a 16fr foley catheter for nephrostomy. Six surgeons with four years of penal experience conducted these surgeries. Modified clavier grading was used to grade perioperative problems.

Results:

Across the board, 46.9% had complications. Most Grade I and II Clavier problems were found in 120 (27%) and 54 (12%), respectively. Temporary fever in 67 (15%) of the patients who received antipyretics and nephrostomy site leakage in 53 (12%) patients who received pressure dressings at the bed site were Grade I complications. 10% of patients with Grade II complications required blood transfusions, and 2% developed sepsis that required parenteral antibiotic treatment. 10 (2% of the participants) experienced Grade III-A complications, including prolonged bleeding in 4 (0.8%) of the patients treated with percutaneous angioembolization and 6 (1.2%) of the patients who needed percutaneous drainage of the perinephric collection. Grade IIIB sequelae occurred in 25 patients (5.5%), 24 patients (5.3%) needed D.J. stenting due to PCS damage or ongoing leakage from the nephrostomy site, and one patient (0.2%) required a colostomy due to a gastrointestinal injury. No Grade IV complication existed. Mortality due to bleeding was 0.4% (Grade V).

Figure 01: Demographically chart

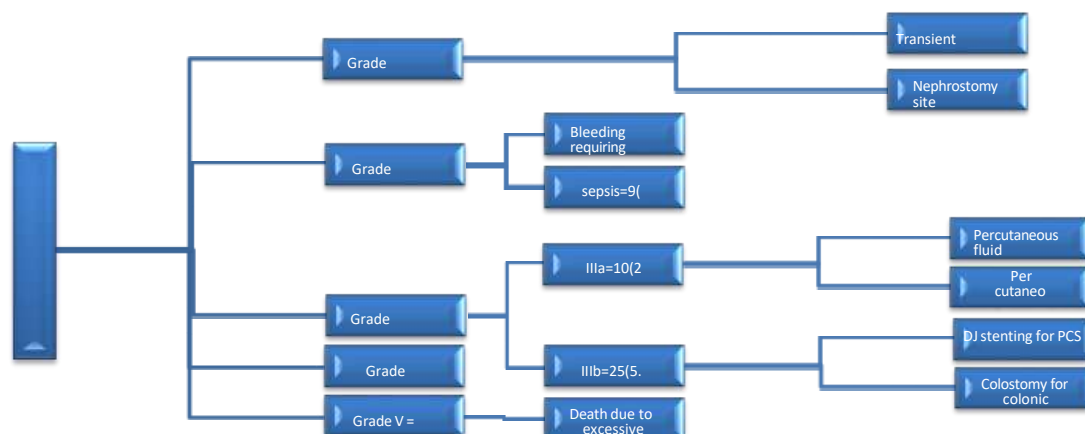


Table 1: Complications According to the Modified Clavien Grading System

Clavien Grade	No. of Patients	Comments
I	120 (27%)	Antipyretics were used to manage transient fever in 67 people (15%). 53 (12%) patients with nephrostomy site leaks received basic pressure bandages at the bedside.
II	54 (12%)	9 (2%) and 45 (10%) received intravenous drugs for sepsis.
III	25 (5.5%)	4 (0.8%) cases of percutaneous angioembolization, 6 (1.2%) cases of percutaneous drainage of perinephric collections, 24 (5.3%) cases of nephrostomy site leakage, and one (0.2%) case of colonic injury requiring a colostomy.
IV	0	-
V	2 (0.4%)	Deaths

Table 2: Situations That Are Complicated According To The Modified Clavien Grading System

Clavien Grade	No. of Patients	Comments
I	120 (27%)	Antipyretics were used to manage transient fever in 67 people (15%). 53 (12%) patients with nephrostomy site leaks received basic pressure bandages at the bedside.
II	54 (12%)	9 (2%) and 45 (10%) received intravenous drugs for sepsis.
III	(5.5%)	4 (0.8%) underwent percutaneous angioembolization, 6 (1.2%) experienced percutaneous drainage of perinephric collections, 24 (5.3%) underwent D.J. stenting for PCS injury or nephrostomy site leaking, and one (0.2%) underwent a colostomy due to a colon injury.
IV	0	-
V	2 (0.4%)	Deaths

Table 3: Complications Rate in PCNL Studies

Study	Complication Rate
Tefekli et al.	29.2%
De la Rosette et al.	43.8%
Guy's Hospital	50.5%
This Study	46.9%

Discussion:

PCNL's total complication rate is between 20% and 83%¹⁰. The real complication rate in our study is 46.9%, compared to 29.2% in Tefekli et al., 43.8% in De la Rosette et al., and 50.5% at Guy's Hospital. The total complication rate in a 5,803-case study was 21.5 percent¹¹. Nephrostomy tube leakage (15%) and transitory per cent needed blood transfusions¹². A complication of Grade III

was found in 9.4% of instances requiring surgery or imaging. In a study of 244 PCNL patients, De la Rosette et al. found a 44.8% complication rate¹³. The overall complication rate at Guy's Hospital in 2008 was 43 per cent,

According to hospital records (50.5 per cent). The most common complication was Clavien Grade I, with 27 cases (32%)¹⁴. Patients with clavier grade III complications needed surgical or radiological intervention in 9% of cases.

Complications of grade IV or V were not discovered¹⁵. Percutaneous pleural access for PNL has a pleural violation incidence of 0.3 per cent to 1%. Our study found no evidence of this since most patients had access to the lower calyceal artery¹⁶. Only 1% of the 3,878 patients who had PNL were found to have significant bleeding, with a transfusion rate of 5.5 per cent. Surgical time and big volume stones may have contributed to the study's transfusion rate of 10%¹⁷. (staghorn). According to a survey by Srivastava and colleagues, persistent bleeding necessitated angioembolization in 1.4% of the 1,854 patients treated with percutaneous renal access and PNL¹⁸. Angioembolization was required in 0.8 per cent of patients in our study¹⁹. In the immediate post-PCNL interval, 30 per cent of patients have a transitory fever, whereas the risk of developing sepsis ranges from 0 to 3.20. 15% of patients had a transitory fever, whereas 2% developed sepsis. Fever (10-30%) was the most common consequence. The Clavien method was used in 811

CONCLUSION:

Percutaneous nephrolithotomy is a secure, economical, and well-tolerated procedure despite the comparatively low chance of serious consequences. The two mildest issues that occur most frequently are brief temperature and nephrostomy tube leakage,

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Percutaneous nephrolithotomies (PCNL) with an overall complication rate of 29.2 per cent, according to Tefekli and colleagues. 16.3 per cent of the patients had grade II problems. Only 4.6 per cent of patients required D.J. stenting for urine leakage, and 10.9 Eight per cent of PCNL patients are reported to have had a PCS injury²¹. Electrolyte abnormalities, mental status changes, and intravascular volume overload are possible consequences of PCS damage²². In our study, 5.3 per cent of patients required D.J. stenting because of PCS damage or leaking from the nephrostomy site, attributable to fluoroscopy guidance. Among the 5,803 patients treated at various facilities throughout the globe, a fatality due to Clavien grade V complications (0.03% of all cases) has been documented (10). Mortality was at a low of 0.4%. The deaths of two patients were attributed to bleeding and comorbidities²³. In terms of stone removal and morbidity, PCNL is a safe technique. Postoperative discomfort is reduced, allowing the patient to return to work more quickly. The short incision and minimally invasive access to the kidney are credited with the low risk of consequences. Complication rates have been greatly lowered due to advancements in stone-breaking techniques and the downsizing of PCNL²⁴.

which typically resolve independently. The shrinkage of PCNLs from normal to mini, ultra mini, and micro has almost eliminated the degree of intricacy.

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