Arab Journal of Urology (2017) **15**, 1–6

Arab Journal of Urology
(Official Journal of the Arab Association of Urology)

www.sciencedirect.com

STONES/ENDOUROLOGY
ORIGINAL ARTICLE

Can percutaneous nephrolithotomy be performed as an outpatient procedure?

Ahmed Fahmy *, **Hazem Rhashad, Omer Algebaly, Wael Sameh**

Department of Urology, Alexandria University, Alexandria, Egypt

Received 24 October 2016, Received in revised form 21 November 2016, Accepted 27 November 2016
Available online 20 January 2017

KEYWORDS

Percutaneous nephrolithotomy;
Outpatient procedure;
Standard of care

ABBREVIATIONS

ER, emergency room;
PCNL, percutaneous nephrolithotomy;
SFR, stone-free rate

Abstract ***Objectives:*** To examine the safety and effectiveness of percutaneous nephrolithotomy (PCNL) as an outpatient procedure, as in most centres PCNL is performed as an inpatient procedure that necessitates postoperative hospital admission.

Patients and methods: Our study included 186 patients undergoing PCNL for renal calculi. Only those who met strict inclusion criteria were discharged home on the same day. Preoperative eligibility criteria for outpatient management included no complex medical problem, normal renal function, and easy access to an emergency room. Patients were divided into two groups. The outpatient group (Group 1) included those patients discharged on the same day as the PCNL and the hospitalised group (Group 2) included those who were considered appropriate for outpatient management but needed to be hospitalised.

Results: In all, 162 patients (87%) fulfilled the inclusion criteria for outpatient management and 146 of these patients (90.1%) planned for outpatient management were discharged on the same operative day (Group 1). The mean time to discharge home was 8.97 h. In all, 16 patients who opted for the outpatient approach subsequently required hospitalisation (Group 2). In the hospitalised group the mean operative time was longer, which was probably related to its higher stone burden.

Conclusion: PCNL can be safely performed with excellent outcomes as an outpatient procedure. Outpatient PCNL offers several advantages including a

* Corresponding author at: Alexandria University, 41 St Abdelmoneam Sanad, Alexandria 321321, Egypt.
E-mail address: Drahmedfahmy@yahoo.com (A. Fahmy).

Peer review under responsibility of Arab Association of Urology.

Production and hosting by Elsevier

http://dx.doi.org/10.1016/j.aju.2016.11.006

more rapid patient convalescence, reduced healthcare expenditure, decreased postoperative nosocomial infections with no additional morbidity for the patient, and with no compromising of the stone-free rate.

Introduction

Percutaneous nephrolithotomy (PCNL) has stood the test of time as the procedure of choice for large renal stones [1]. In most centres, PCNL is performed as an inpatient procedure that necessitates postoperative hospital admission. Whether postoperative hospitalisation improves outcome or is necessary after PCNL has recently been challenged [1,2].

Due to large case volume of urolithiasis associated with refinement in PCNL technique and expertise, there is an ongoing shift towards decreasing the length of hospital stay and performing PCNL as an outpatient procedure whenever possible [3]. In addition, eliminating costs associated with a hospital admission represents an intriguing potential target in healthcare systems with limited resources and funds. In the present study, we examined the safety and effectiveness of PCNL as an outpatient procedure (see Fig. 1).

Patients and methods

This retrospective hospital record-based study was conducted on 186 patients undergoing PCNL for renal calculi. All patients were considered for an outpatient PCNL procedure, but only those who met strict inclusion criteria were discharged home on the same day. The inclusion criteria were:

- No complex medical problem, i.e., American Society of Anesthesiologists (ASA) class 1 or 2.
- Normal renal function, i.e., serum creatinine of <1.2 mg/dL.
- Social support at home and easy access to an emergency room (ER).

All patients deemed unsuitable for the outpatient approach were excluded from the study. Exclusion criteria included: cases considered medically inappropriate for outpatient management and those living in remote areas distant from a hospital or in absence of social support at home. The stone burden or the presence of staghorn stones were not exclusion criteria for out-patient management.

Patients were divided into two groups. The outpatient group (Group 1) included those patients discharged on the same day of surgery. The hospitalised group (Group 2) included those who were considered appropriate for outpatient management but needed to be hospitalised (physician preference). The study was approved by the Institutional Review Board at the Faculty of Medicine, Alexandria University, Egypt.

Preoperative laboratory evaluations included serum creatinine, urine culture and complete blood count. A UTI was present in 18% of the patients and was preoperatively treated with pathogen-specific antibiotics. Noncontrast CT was the primary radiological evaluation for most patients, except those who had undergone excretory urography elsewhere.

Preoperative, intraoperative, and postoperative data were prospectively collected from March 2011 to July 2014 and analysed, with attention on the need for re-hospitalisation, ER visit, perioperative complications, and stone-free rates (SFRs). Follow-up by telephone call was done on the second postoperative day, and at 1 and

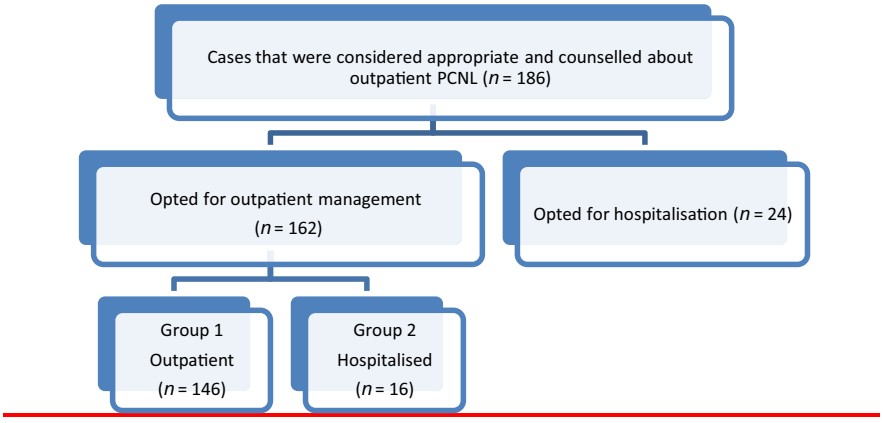

Figure 1 Study cases.