BALLOON DILATOR FOR NEPHROSTOMY TRACT DILATATION: EXPERIENCE with 28 cases & comparison with alkan dilator system

Tarek M.A El-Gammal, M.D.
National Institute of Urology and Nephrology, Cairo, Egypt

Objective:
We present our initial experience with the high-pressure balloon dilator in nephrostomy tract dilation for percutaneous renal access & Compare our results retrospectively with a group of patients in whom metal Alkan dilators were used.

Patient and Methods:
Our study population consists of twenty eight patients, who had undergone percutaneous nephrolithotomy (PCNL) between Jan. 2007 & Jan. 2008 using high-pressure dilating balloon catheter. Insertion time, total operative time, blood loss, tract dilatation failure, pelvi-calyceal system perforation and the balloon cost were recorded & compared retrospectively with the results of the same procedure using metal alkan dilators.

Results:
Among the study patients who underwent balloon dilatation, the average insertion time was shorter (5min.), compared with the Alkan dilatation group (20-25min.), while the average total operative time was $90\text{min.}$ for balloon dilation & $120-140\text{min.}$ for alkan dilation a difference that is statistically significant. There was no renal hypermobility or collecting system injury or significant blood loss as we have clearly shown during the sequential alkan dilatation. The disadvantages reported were the high balloon cost & some difficulties in performing access in patients with prior renal surgery.

Conclusion:
Our study have shown that in spite of some downsides of balloon dilation system like high cost & some insertion difficulties among patients with prior renal surgery, it can be regarded as the most safest (atraumatic), Efficacious (high performance single-step technique) & Faster (short total operative & Fluoroscopic time) dilation system for renal access with improved haemostasis, compared to other kinds of mechanical dilators such as metal alkan dilators. Although metal alkan dilators are cost-effective; there was a significant problems during the dilation procedure including kidney hypermobility, pelvi-calyceal system perforation, blood loss, & time consumption.

Key Words:
Balloon dilation, metal alkan dilation, percutaneous nephro-lithotomy, renal calculi.