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Patterns of complexity of urinary stone disease based on anatomical sites and stone number: A study conducted among the patients who underwent surgical intervention at Genitourinary Surgical unit, Teaching Hospital, Jaffna

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Background: Urinary stones are commonly formed in the kidney and urinary bladder. Rarely stones can form in the ureter and urethra when functional or anatomical defects are present in the urinary tract. Mode of presentation of disease, morbidity and mortality, type of intervention required, rate of stone clearance after intervention, urgency of intervention and selection of anatomical site for intervention depends on anatomical site and stone burden.

Objective: The majority of the previous studies have considered the anatomical sites of the urinary stones based on the site where intervention was performed, while this study is to describe all the anatomical sites of the stones irrespective of the intervention site in the patients who underwent interventions.

Method: This descriptive cross sectional study was carried out between October 2016 and November 2017 on patients who underwent intervention at Genitourinary Surgical Unit, Teaching Hospital Jaffna. All the patients had CT scan before intervention.

Results: Among the 115 patients selected, males (66.1%) were more affected than females (33.9%). The age of the subjects having stones ranged from 07 to 85 years with the mean age of 50.9 (± 16.2) years. The majority of the males (65.7%) and females (66.6%) were in the productive age group (21 to 60 years). Out of 115 patients, 61.7% had stones in single site while 38.3% had stones in multiple sites. Among those with single site, 38, 35.2, 19.7 and 7% had in ureter, bladder, kidney and urethra respectively. Among those (n=44) with multiple sites, 79.5% had in the upper urinary tract, 20.4% had in the upper and lower urinary tract and 65.9% (n=29) had on bilateral sides of the urinary tract. Among the 29 patients, 9 had in bilateral kidney & unilateral ureter; 9 had in kidney & ureter of opposite side; 3 had in bilateral ureter; 2 had in bilateral ureter & bilateral kidney; 2 had in bilateral ureter & unilateral kidney; 2 had in bilateral kidney and 2 had in bilateral kidney & bladder. Of the 115 patients, 68 renal units were affected by stones; 32 had multiple stones, 32 had single stone and 4 had staghorn stone. Among the patients who had stones at multiple sites, 18.2% had multiple stones at multiple sites and on bilateral sides of the tract.

Conclusions: Significant number of patients (18.2%) had stones in multiple anatomical sites with multiple stones on bilateral sides, creating a challenge for the health system to manage and such complexity can lead to high risk of morbidity and mortality.