



## Service Priorities and Programmes Electronic Presentations

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### **Family Physicians Performed Ultrasound to Allow Early Detection of Hydronephrosis in Patients with Suspected Urinary Calculus in Family Medicine Specialist Clinic(FMSC)**

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#### **Introduction**

Suspected upper urinary tract stone by symptoms or X-rays is one of the most common conditions triaged from Urology SOPC to FMSC. Hydronephrosis is an important complication of urinary calculus and delayed diagnosis could result in irreversible renal damage. In contrast to arranging imaging in radiology department traditionally, family physicians performed ultrasound(USG) in Ha Kwai Chung(HKC) FMSC consultation to allow early detection of hydronephrosis in patients with suspected urinary stone disease and identify patients who should be given priority in further investigations and management.

#### **Objectives**

To estimate the accuracy of USG finding performed by family physicians in diagnosing hydronephrosis in suspected stone cases.

#### **Methodology**

This is a retrospective review of new cases seen from January 2015 to June 2015 in HKC FMSC Urology for suspected upper urinary tract stones by symptoms or X-rays. Cases had USG performed by family physicians in the first FMSC consultation and subsequent urinary tract imaging (e.g. USG, CT, IVU) by either private or HA radiologists were further analyzed. Patients with USG, CT or IVU done by radiologists within 12 months prior to first FMSC consultation or those suspected to be suffered from conditions other than urinary stones were excluded.

#### **Result**

Total 181 cases fit the inclusion and exclusion criteria were studied. The positive disease finding was regarded as USG showing hydronephrosis. The subsequent USG, CT or IVU results reported by radiologists were used as the true disease finding. The finding showed: True positive=23, False positive=1, False negative=4, True negative=153. Prevalence of hydronephrosis among the test sample=15%, Sensitivity=85.2%, Specificity=99.4%, Positive Predictive Value=95.8%, Negative Predictive Value=97.5%. 24 of the 27 patients with hydronephrosis were referred

to PMH Urology for further management. 22 of them were suffered from obstructive urinary tract stones, in which 19 patients were treated with ESWL, PCNL or URSL. They were seen by PMH urologists with an average waiting time of 32.3days (range: 4-59days). Conclusions: USG by family physicians showed good positive and negative predictive value in detecting hydronephrosis in patients with suspected urinary tract stones. This allowed early detection of obstructive urinary tract stone disease, prioritized resources to patients who needed early investigation and subsequent intervention by urologist.