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Incidence of Computed Tomography (CT) detected urolithiasis

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Introduction: A world-wide increase in the prevalence of stone disease has been reported in the last 30-40 years.¹⁻⁵ In the current era, with the extensive use of computed tomography (CT), the rate of urinary stones has steadily increased.⁶

Aim: To determine the incidence of urolithiasis detected on CT imaging, either CT abdomen and pelvis (CT AP) or CT intravenous pyelogram (CT IVP) in our local Singaporean population and to describe their characteristics.

Methods and Materials: A retrospective review of 1,894 consecutive patients who underwent CT AP or CT IVP in Changi General Hospital (CGH) during from September to December 2011 was conducted. Presence, size, location & number of stones were recorded.

Results: 1,894 consecutive patients (aged 13 – 105 years, mean 56.1±19.6years; 998 males & 896 females) underwent CT imaging (1,454 CT AP and 440 CT IVP) during that period.

Patients with urolithiasis were aged 20 – 93 years (mean 57.8±16years) and 71.5% (204) were male. The incidence of urolithiasis was 14.99% (284 cases) with a total of 332 stones identified, ranging from 6.7% in the 2nd decade to 20.7% in the 5th decade of life. Stones were more common in males across all age groups (overall 20.3% vs. 9.0%).

The type of stones was as follows: renal – 73.7% (247), ureteric – 22.1% (74) & bladder – 4.2% (14). Of the renal and ureteric stones, 43.4% were left sided, 41.2% were right sided and 15.4% were bilateral. The size of the stones ranged from 1 – 49mm (mean 5.74±5.7mm). 34.9% had multiple stones.

86.4% of the stones were managed conservatively while 5.9% underwent extracorporeal shockwave lithotripsy (ESWL), 4.4% underwent ureteroscopy and laser lithotripsy, 1.5% underwent percutaneous nephrolithotomy (PCNL), 1.2% underwent percutaneous nephrostomy (PCN) and 0.6% underwent cystolithotripsy.

Conclusion: Our study revealed a prevalence rate of 15.0% for urolithiasis which is significantly higher as compared to figures reported in the literature.⁶⁻⁷ This trend is likely due to the increased usage of CT imaging.

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