Incidence of iatrogenic urethral catheterisation injuries: A prospective multicentre audit

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Introduction: There is a lack of data on the natural history of asymptomatic intra-renal calculi. In this study we investigate the rate of stone related events (SREs) in patients with untreated intra-renal calculi and factors predicting SREs. SREs were defined as spontaneous stone passage, stone migration to ureter requiring surgical intervention and non-colic related symptoms leading to surgical intervention.

Methods: All patients diagnosed with an asymptomatic intra-renal calculus on CT KUB managed conservatively with interval imaging for >6 months were included. In cases of bilateral asymptomatic stones each renal unit was evaluated separately. Patients were evaluated for any SRE and the rate of SREs according to calculus size, stone location and number of calculi was analysed. Multivariate logistic regression analysis were preformed to produce odds ratios (OR) with confidence interval (CI) at 95% and significance values P < 0.05.

Results: In total, 266 renal units from 177 patients met inclusion criteria. The overall rate of SRE was 45.1% (120/266). SRE required surgical intervention in 66% (n = 80) patients and resulted in spontaneous passage of the stone in 33% (n = 40). Increasing stone size predicted a higher rate of SRE (>5 mm; p=0.01, >10 mm p=0.03) as did inter- polar (p=0.03) and multiple stone locations (p=0.03).

Conclusion: In this large series of patients with asymptomatic intra-renal calculus, the incidence of a spontaneous SRE was 45.1% after 41 months. Stone size and stone location were significant predictors for SREs. Information from this study will enable urologists to accurately counsel urological patients when considering conservative management of asymptomatic intra-renal calculi.

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An analysis on the predictors of stone related events in asymptomatic renal stones

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Introduction/Aim: Limited data exist on frequency of iatrogenic catheter-related urethral trauma. Previous work by our group within 2 Irish hospitals in 2015 identified an injury rate of 3.2/500 catheterisations1. We aimed to further investigate this on a larger scale.

Methods: A prospective, multi-centre, observational study, incorporating 7 academic hospitals across Ireland (n = 4) and the UK (n = 3). Data was collected as part of an audit of injuries encountered on-call and anonymised pre-analysis. Any reported occurrences of urethral trauma due to attempted catheter placement that resulted in urology referral were recorded over a pre-specified period (3–4 months). Previously, the monthly catheter insertion rate was found to approximate the hospital bed number. Data were collated, evaluated and interpreted in the context of historical data.

Results: A total of 66 urethral catheterisation injuries (all male) were identified (7 centres; mean 3.43 months). The average injury rate was 3.08/500 catheterisations (range 1.59–7.21/500). This is strikingly similar to the 3.2/500 incidence recorded in 2015. Some variability within figures from each site may reflect heterogeneity in data collection methods. Based on our previous figures, at least 70% of injuries are related to balloon inflation, 80% (53/66) have a Clavien-Dindo morbidity ≥ Grade 2, and incur costs for initial management predicted in the range of €598,240 (not including long-term and medicolegal costs).

Conclusions: Iatrogenic, catheter-related, urethral trauma, mainly related to balloon inflation injury, is a recurring, universal medical error resulting in significant patient morbidity with a substantial financial burden to healthcare services. These data highlight the need to design and test technology to prevent accidental balloon inflation during urinary catheterisation.

Reference