

 PAEDIATRIC UROLOGY

Kids with stones—data on causes and treatment safety

Two retrospective studies published recently in *The Journal of Urology* add to the body of evidence on paediatric upper-tract stone disease. The first study shows that obesity is not a significant risk factor for urolithiasis in children, whereas the second confirms the use of percutaneous nephrolithotomy (PCNL) as a safe and effective treatment modality.

Numerous studies and epidemiological data have shown that childhood obesity is on the rise globally. As the association between obesity and urolithiasis has been clearly shown in adults, Charles Durkee and co-workers sought to explore whether the same association could be found in children. “We need to get to the root causes of the increasing incidence to be able to recommend general preventative strategies,” says Durkee.

By conducting a chart review of all patients with stones aged 10–17 years treated at several centres in the Midwest of the USA, they identified 84 patients for whom demographic, BMI, urine collection and other key data were available. No difference was seen in the rate of obesity between the study population (11 out of 84 patients) and the general population, although the size of the study group limits the general applicability of this finding. Furthermore, the proportion of children with low urine output and hyperuricosuria did not differ between the obese and non-obese groups. This finding was compounded with a finding of no metabolic differences between the normal-weight stone formers and the obese stone-formers. Overall, the findings of this study do not support a link between obesity and childhood urolithiasis.

The second, unrelated, study from the Turkish Pediatric Urology Society examined the risk factors for complications of PCNL, which is widely used to treat paediatric stones, particularly



in patients with staghorn, cystine and struvite stones. Data from 1,157 children were collated, including history of stone disease, previous interventions, urine culture, operative time and point of percutaneous puncture.

Several factors—such as hospitalization time and stone location—were significantly associated with PCNL complication on univariate analysis. The investigators considered complications such as need for blood transfusion, pleural injury, febrile UTI, pain, renal abscess and bowel injury. Of the numerous factors assessed, only operative time, sheath size, mid-calyceal puncture and partial staghorn formation were significantly associated with complications on multivariate analysis. Overall, PCNL is safe and has a low rate of complications in children.

These studies highlight the importance of continued stone research in paediatric urology to address long-standing and emerging questions of risk and optimizing care. “Much work remains to be done,” concludes Durkee.

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Original articles Roddy, J.T. *et al.* Metabolic evaluation of urolithiasis and obesity in a Midwestern pediatric population. *J. Urol.* doi:10.1016/j.juro.2013.09.064 | Onal, B. *et al.* Factors affecting complication rates of percutaneous nephrolithotomy in children: results of multi-institutional retrospective analysis by Pediatric Stone Disease Study Group of Turkish Pediatric Urology Society. *J. Urol.* doi:10.1016/j.juro.2013.09.061