dysfunction early on. It remains to be seen whether or not early and aggressive management of bladder dysfunction can have an impact on outcomes.

Reference

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Safety of shock wave lithotripsy for treatment of pediatric urolithiasis: 20-year experience

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Purpose: This retrospective study was designed to assess the impact of shock wave lithotripsy on the pediatric kidney using pretreatment and posttreatment (99m)technetium dimercapto-succinic acid renal scintigram.
Materials and Methods: A total of 182 patients 5 months to 19.8 years old (mean 5.3 years) were treated for renal calculi with shock wave lithotripsy during a 20-year period. Pretreatment evaluation included clinical assessment, urine culture, renal ultrasound and plain abdominal radiograph with or without excretory urogram. Dimercapto-succinic acid scintigram was performed before and 6 months after completion of treatment in 94 patients (52%).
Results: Patients underwent 1 to 4 sessions of shock wave lithotripsy per kidney with at least 1 month between treatments. Median number of shocks delivered per session was 3,000 (IQR 2,601 to 3,005). No new scars were observed on any posttreatment dimercapto-succinic acid scan. Regarding renal function, patients fell into 1 of 4 groups. Group 1 (66 patients, 70%) had normal function on dimercapto-succinic acid scan before and after treatment, group 2 (18, 19%) had decreased function in the affected kidney on pretreatment scan with no change after treatment, group 3 (2, 2%) had impaired function in the treated kidney that was transient (1) or permanent (1) and group 4 (7, 7%) had improved function in the treated kidney.
Conclusions: Shock wave lithotripsy is an effective treatment for renal calculi in children. Renal parenchymal trauma associated with extracorporeal shock wave lithotripsy does not seem to cause long-term alterations in renal function or development of permanent renal scars in children.

Editorial Comment

This retrospective study looked at 182 pediatric patients who were treated for renal stones over 20 years using shock wave lithotripsy. They had a low number of complications with steinstrasse developing in 2 patients and another 2 patients who developed pyelonephritis. Part of their preoperative assessment included a DMSA scan. What is remarkable about this study is that they were able to get posttreatment DMSA scans in 94 patients six months following lithotripsy. No new renal parenchyma scars were discovered on their follow-

up DMSA scans. In addition, 89% of the patients had no change in function. They had 7 patients who actually had increase in their relative function in the affected kidney and 3 patients that had a greater than 5% decrease in function. Only 1 of these had permanent deterioration of function which was felt by the authors to be more likely due to obstruction rather than the shock wave lithotripsy.

There has always been concern about the collateral parenchymal damage done with shock wave lithotripsy particularly in the pediatric population. The data from this paper would indicate that any damage sustained is temporary and typically resolves within six months of treatment.

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