

Removing ureteral stone fragments is better than leaving them to pass spontaneously

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By Victoria Stern

NEW YORK (Reuters Health) - During semirigid ureteroscopy with holmium laser lithotripsy, retrieving all stone fragments leads to better outcomes than allowing them to pass spontaneously, according to a paper published online ahead of print in the Journal of Urology.

"The result of exhaustive holmium laser lithotripsy is an accumulation of tiny stone fragments in the ureteral lumen that resembles a pile of dust," writes Dr. Oscar Schatloff, from Chaim Sheba Medical Center in Tel Hashomer, Israel, and his colleagues. This pile of dust, the authors add, "obscures vision and occupies space" and can actually hide fragments large enough to be clinically significant.

In a prospective trial, the researchers randomized 60 patients either to intraoperative fragment retrieval (group 1) or spontaneous fragment expulsion (group 2). In the retrieval group, stones were hit first at their center, with the laser operator continuing to create smaller half-size stones until fragments were small enough to be retrieved. When stones were to pass on their own, they were exhaustively "vaporized," according to the article.

On average, the retrieval group patients were younger (47 vs 54 years, $p=0.05$), but otherwise there were no significant differences between the groups. Complicated cases (for example, patients with known strictures, indwelling ureteral stents, use of drugs that affect smooth ureteral muscle) were excluded. Ureteral catheters or stents were left in place for 24 hours unless extended placement was indicated.

At 30 days, rates of the primary outcome -unplanned medical and emergency room visits - were 30% in group 2 and 3% in group 1 (adjusted OR, 12.4; $p=0.01$). One patient had an unplanned visit for every four patients assigned to spontaneous fragment passage, according to the authors.

The spontaneous group also tended to have more rehospitalizations (10% versus 0%; $p=0.24$), more ancillary treatment (7% versus 0%; $p=0.49$), and a lower stone-free rate (87% versus 100%; $p=0.1$).

"This is an interesting study," Dr. Brian Eisner, an endourologist at the Massachusetts General Hospital in Boston, commented to Reuters Health in a phone call. "This was one of the first papers to systematically compare the effectiveness of two very commonly used techniques."

Dr. Eisner, who was not involved in the research, pointed out that there may not have been as large a difference between the two techniques if a ureteral stent had been left in for several days, as opposed to just one.

The authors themselves acknowledge that their short follow-up was a drawback, precluding evaluation of long-term complications in general and stricture risk in particular.

Even so, they conclude, "Not actively retrieving fragments during semirigid ureteroscopy and holmium laser lithotripsy is associated with a higher risk of unplanned medical visits than complete intraoperative extraction."