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Re: Removal of Small, Asymptomatic Kidney Stones and Incidence of Relapse

Sorensen MD, Harper JD, Borofsky MS, et al

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Experts' summary:

The authors conducted a multicenter study randomizing symptomatic adult stone patients to either removal of the symptomatic ureteral or renal stone only (control group) or additional removal of ≤ 6 -mm asymptomatic ipsilateral kidney stones (after ureteral stone removal) or contralateral kidney stones (after kidney stone removal) (treatment group). The treatment group experienced a prolonged operation time of 25 min.

During follow-up of 4.2 yr the treatment group had a longer time to relapse (4.5 vs 2.6 yr). The relative risk was 82% lower than in the control group (16% vs 63%). The number of emergency visits within 2 wk after the intervention was comparable in both groups. New stone formation occurred in 37% in both groups during follow-up. After excluding stone growth as a marker of relapse, the time to relapse in the treatment group still remained 36% longer.

Experts' comments:

The risk of progression of small, asymptomatic kidney stones is unclear and there is no consensus on the type of intervention that should be used [1]. Several issues have to be taken into consideration. First, the study included symptomatic patients and the results cannot be extrapolated to recommend treatment of patients harboring asymptomatic small stones only. Second, preventive measures for stone recurrence are not described in detail and only 25% of the patients were on medication for stone prophylaxis. Recommendations on structured lifestyle changes, including increasing fluid intake, weight loss, a reduction in sodium consumption, and an increase in potassium-rich foods, are difficult to adhere to but may have influenced recurrence rates to a substantial extent. Third, differences in national policies need to be taken into account; for example, contralateral stone removal may not be reimbursed and may also be associated with legal issues in the case of complications, which would therefore increase hospital costs. However, costs may be weighed not only against the increased need for repeat surgery but also against economic burdens associated with relapse, such as reduced productivity caused by a negative impact on quality of life, sick leave, and doctor visits.

Ideally, patients who benefit the most from additional stone removal should be identified.

- (1) **Stone burden:** It remains unclear whether the benefits would outweigh the burdens after removal of multiple asymptomatic stones and stones >6 mm.
- (2) **Stone formation risk:** High-risk stone formers might experience stone-related events in spite of complete stone clearance caused by their underlying high-risk profile, leading to rapid new stone formation. Low-risk stone formers might be good candidates for complete asymptomatic stone removal as they have a higher probability of remaining stone-free, and hence symptom-free, for several years [2].
- (3) Preventive measures including the use of novel medications [3] may be a viable option for distinct patient groups avoiding surgery for asymptomatic stones.

In summary, it might be wise to recommend and perform removal of small asymptomatic stones in patients on the basis of results from this multicenter randomized controlled trial, but focusing at the same time on identification of high-risk stone formers who might profit from faster single-sided symptomatic stone removal alone followed by metabolic evaluation and intensified guidance. In addition, use of novel prophylactic medications in a stone center may result in fewer stone-related events, increasing quality of life for patients and saving resources.

Conflicts of interest: The authors have nothing to disclose.

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