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Press Release

Kidney stones are often excreted without pain

A research team led by Inselspital, University Hospital Bern, and the University of Bern has shown that a high percentage of kidney stones are excreted without symptoms. This finding should be incorporated into the future treatment of patients with recurrent kidney stones.

Kidney stones are caused by the deposition of minerals and salts in the kidneys and can lead to severe pain when passing through the urinary tract. The incidence of kidney stones has increased significantly in recent decades, partly due to changes in lifestyle and diet. Kidney stones often recur, increasing the risk of recurrent symptoms.

It was previously known that kidney stones, especially small ones, can be passed without symptoms. However, little research has been conducted into how often this happens and which stones are passed painlessly.

Extensive analysis of the undetected excretion of kidney stones

A study has now systematically investigated for the first time how often kidney stones are excreted without accompanying symptoms and which factors promote this. This is a *post hoc* analysis of the NOSTONE study, which involved twelve centers from across Switzerland and was funded by the Swiss National Science Foundation (SNSF) and Inselspital. The study observed a total of 383 patients who had suffered from kidney stones at least twice in the last ten years. The patients were examined closely every three months over a period of three years. Examination methods such as computed tomography (CT) were used, which can determine precisely whether and how kidney stones change.

High rate of asymptomatic stone excretion

The results of the analysis were surprising: 36% of the stones passed by the patients examined were asymptomatic: the stones were excreted without the patients experiencing pain or other symptoms. "This is an unexpectedly high percentage," says Professor Daniel Fuster, Head Physician at the Department of Nephrology and Hypertension. "This is good news for the patients concerned, as obviously not every stone that is passed also causes pain."

Another notable finding of the study was that the size of stones that were passed unnoticed did not differ significantly from the size of those that caused pain when passed. This means that stone size alone is not a reliable indicator of whether a stone will cause symptoms.

New approaches to the treatment of kidney stones

The results of this post hoc analysis raise the question of how the follow-up care of patients with kidney stones can be improved. Because the size of the stones is not the only decisive factor, other criteria should be taken into account when deciding whether and when a stone should be removed. These could include the exact position of the stone in the urinary tract or its composition. "The study shows that, in addition to size, other factors that are not yet fully understood determine whether a stone causes pain or not. This means that in the future, we may be able to be more cautious with invasive interventions if stones do not cause symptoms," Prof. Fuster explains. Further studies are needed to make more precise predictions about which stones will remain asymptomatic and which may cause problems.

Link

[Universitätsklinik für Nephrologie und Hypertonie](#)

Publication

Stritt K, Fuster DG, Dhayat NA, et al. Risk Factors of Asymptomatic Kidney Stone Passage in Adults with Recurrent Kidney Stones. Clin J Am Soc Nephrol. 2024 Jul 19. [doi: 10.2215/CJN.000000000000496](#). Online ahead of print.

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