

EVALUATION OF THE REASON OF URINARY STENOSIS: POSSIBILITIES OF RADIOLOGY

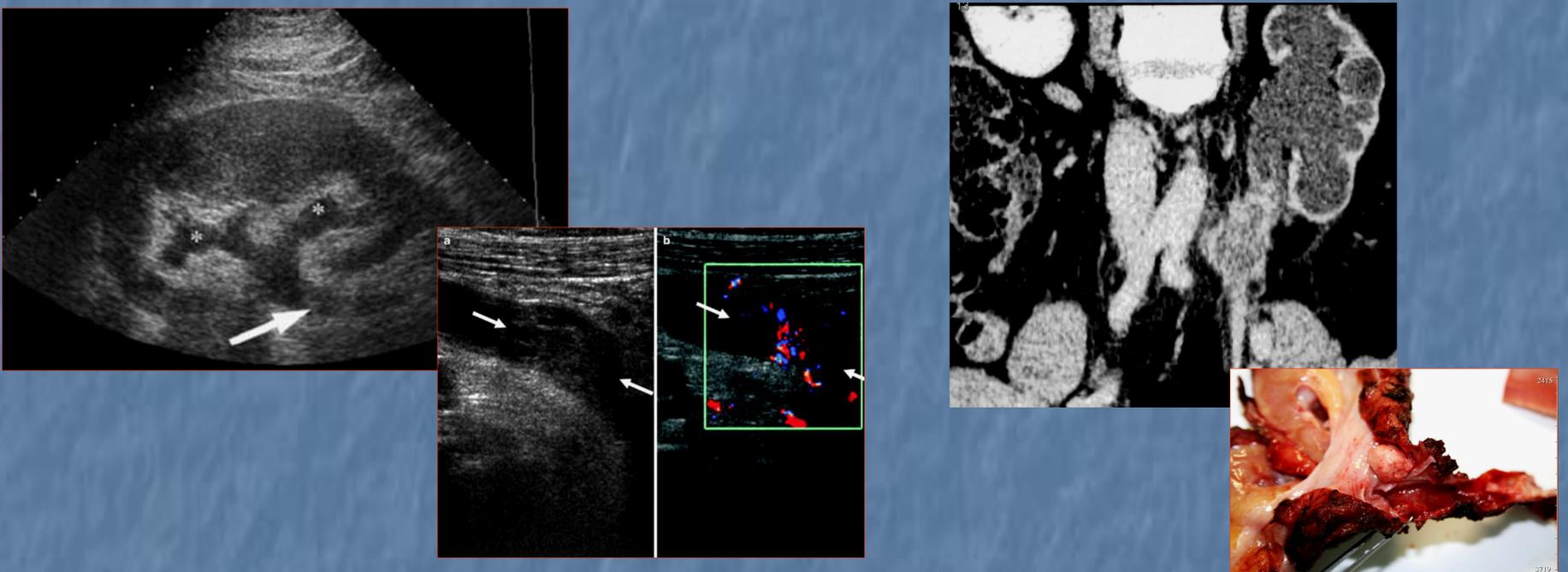
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Background: to evaluate the possibilities of radiology in assessing the causes of ureteral stenosis.

Materials and methods. Ureter diseases are rarely detected. In four large Russian clinics **47 patients** with such lesion were treated in 2014-2018. Of these, in 14 (29.8%) cases, ureteral stenosis was diagnosed, in which there were "creeping" changes in the walls without extraorgan spread. All patients underwent US, MSCT and MRI.

Results. US allows to determine the level of ureter damage due to expansion above stenosis. It is practically impossible to differentiate the tumor and fibrous nature of the lesion at US, since the volume of the lesion is insignificant and, even if visualization of the violation of the wall layers differentiation is visualized, it is difficult to detect bloodflow in the tumor tissue, due to the extremely small caliber of the tumor vessels. It was possible to register the bloodflow at US in 2 cases only, in 1, a long-standing kidney stone disease (KSD) formed an inflammatory cushion around the ureter with increased bloodflow. The level of damage and the ureter dilated higher was also diagnosed in MSCT and MRI in all cases, tumor lesion was diagnosed in 4 cases, KSD in 6.

LESION OF THE URETER localization of the tumor in the upper third



All research methods allowed to verify the disease

A urothelial tumor diagnosed in 4(28.6%) cases, KSD confirmed by calculi in the kidney in 6(42.8%), it wasn't possible to determine the cause of ureteral stenosis (the tumor was excluded) in 4(28.6%). With damage to the ureter muscle layer, the nature of the ureteric discharge can significantly change. Ureteric discharge is observed in CDI at transabdominal US (transrectal if necessary). The absence of ureteral discharge in all cases indicated both obstruction of the ureter and damage to the muscle layer. With incomplete obstruction, the nature of the ejection changed, asymmetry was revealed in the frequency, intensity and direction of the ejections. Damage to the muscle layer of the ureter was suspected in 6 cases.

All patients were treated: urothelial cancer - radical surgery (n=4) with plastic in 2; stenosis of the ureter due to KSD in 4 cases and stenosis of undiagnosed etiology in 4 - stenting of the ureter; in 2 cases with KSD - resection of the ureter with plastic surgery.

Comparison the morphology of ureteral stenosis and ureteral discharge data: the muscle layer is damage - the flow is at an angle $<45^\circ$, has a rounded apex and non-intense staining; in the absence of the muscle layer damage - the flow is at an angle $>45^\circ$, has a sharp peak and intense staining. The ejection frequency didn't depend on the wall lesion volume.

Conclusion. Currently, it is difficult to differentiate the damage to the muscle layer of the ureter with its stenosis (tumor or fibrous) according to radiology at "creeping" damage. The nature and quality of the ureteric discharge from the damage side may be differential diagnostic sign. However, this symptom allows you to differentiate the lesion of the muscle layer, but doesn't allow to determine the nature of the lesion.