

Application of X-ray endovascular occlusion methods in the treatment of prostate cancer

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Background. The use of radiotherapy at the treatment of prostate cancer makes it possible to radically cure the neoplasm, but does not reduce infravesical obstruction. With localized prostate cancer, the cause of acute urinary retention is concomitant benign prostatic hyperplasia. X-ray endovascular occlusion of the prostate vessels is based on a decrease in arterial inflow to the prostate gland, which leads to a decrease in its volume and a decrease in the severity of symptoms of obstruction.

Aim. To evaluate the effectiveness of the use of X-ray endovascular occlusion of the prostate vessels as a combined treatment for prostate cancer in order to reduce infravesical obstruction.

Methods. 15 patients with severe lower urinary tract symptoms scheduled for radiotherapy for prostate cancer. Average age is 68 years. Inclusion criteria: $Q_{\max} < 10$ ml/s, prostate volume > 50 cm³, residual urine volume > 50 ml. In the conditions of the X-ray operating room, a puncture of the common femoral artery was performed, a microcatheter was carried out to the arteries of the prostate gland and their selective embolization with microparticles with a diameter of 250–500 microns.

Results. 1 patient underwent unilateral embolization, 1 patient failed to embolize the arteries on both sides, 1 patient underwent embolization after remote radiation therapy due to the development of obstruction. 2 patients with locally advanced and metastatic prostate cancer without radiotherapy. There were no complications during the treatment and in the postoperative period. All patients noted positive dynamics in assessing the quality of urination. All patients had a decrease in prostate volume and urodynamic parameters (14 to 30 days) after embolization. No significant positive dynamics was achieved in 2 patients.

Conclusion. X-ray endovascular occlusion of the prostate vessels is an effective minimally invasive method, can be considered as an independent technique and used to reduce the volume of the prostate in preparation for subsequent radiotherapy. The technique expands the doctor's arsenal when choosing a method for treating prostate cancer, improves the results of treatment, and also has a positive effect on the quality of life.

Keywords: prostate cancer; X-ray

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