

Congress Abstract

Minimally Invasive Technology in The Treatment of Bladder Tumors Complicated by Bleeding

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Background: Tumor-related bleeding in bladder cancer is a serious complication that may limit the feasibility of standard surgical treatment, particularly in patients with comorbidities. Chemoembolization of the inferior vesical arteries is a minimally invasive technique combining local administration of an antineoplastic agent with embolization of the vessels supplying the tumor.

Objective: To evaluate the outcomes of chemoembolization of the inferior vesical arteries in patients with bladder cancer complicated by bleeding.

Materials and Methods: From 2020 to November 2024, chemoembolization of the inferior vesical arteries was performed in 12 patients with bladder cancer at the State Enterprise on the Right of Economic Management "Multidisciplinary Medical Center" of the Akimat of Astana. The procedure was performed using doxorubicin (Adriamycin) at a dose of 50 mg or cisplatin at a dose of 50 mg. Treatment efficacy was assessed based on the patients' general condition, presence of gross hematuria, changes in laboratory blood parameters, and tumor size evaluated by computed tomography, ultrasonography, and cystoscopy.

Results: At two months after chemoembolization, no episodes of gross hematuria were observed, and laboratory blood parameters showed improvement. After two chemoembolization sessions, tumor size decreased by more than 25% on average, as assessed by computed tomography, ultrasonography, and cystoscopy. Six patients underwent surgical treatment three months after the first chemoembolization procedure: transurethral resection in four patients, open bladder resection in one, and cystectomy in one. Histopathological examination of the resected tumor tissue demonstrated treatment-induced tumor necrosis. Three patients with advanced disease were referred for further chemoradiotherapy. Three patients with early-stage disease remained under surveillance with a recommendation for intravesical chemotherapy.

Conclusions: Chemoembolization of the inferior vesical arteries may be considered a minimally invasive method for controlling tumor-related bleeding in patients with bladder cancer, particularly when major surgical intervention is limited by comorbidities. The findings suggest that this approach may be promising; however, the small sample size and limited follow-up period warrant further investigation to determine the optimal number of treatment sessions and assess long-term efficacy.

Keywords: Bladder Cancer; Hematuria; Chemoembolization; Embolization; Cisplatin; Transurethral Resection