Background: Cell-adhesion molecules (CAMs) are important factors in the maintenance of normal tissue structure, and morphology and aggressivity and invasivity of tumors.

Materials and Methods: Twenty cases of superficial and myoinvasive carcinomas with different grading (low and high grade) were analysed in respect of the expression of CAMs in their nonneoplastic urothel and in the different parts of the tumors.

Antibodies:
Cadherin-Pan 1/200, E-Cadherin 1/100, P-Cadherin 1/50 and Catenin Beta 1/250 Thermo Scientific, Freemont CA, USA, N-Cadherin 1/200 Lab Vision, UK, Ltd, Catenin Alpha 1/50 and H-CAM (CD44) 1/50 Novocastra Laboratories Ltd.

Results: High E-Cadherin expression is found in the cellmembranes of nonneoplastic and low grade urothelial carcinomas; high grade in-situ-carcinoma have discontinuously stained cellmembranes; in some myoinvasive high grade carcinomas, most cellmembranes lose their E-Cadherin component. In contrast, membranous N-Cadherin is not seen normal transitional cells and low grade dysplasia, but intensively in highgrade dysplasia and deep invasive, high grade carcinomas. The distribution of P-cadherin resembles E-Cadherin. Catenin alpha: high expression in pTa low grade tumors; low expression in myoinvasive carcinomas. Catenin beta: high membranous expression in pTa low grade tumors; low membranous cytoplasmic and intranuclear expression in myoinvasive carcinomas and high grade tumors.

Conclusions: Progressive urothelial carcinomas show a shift of E-Cadherin and P-Cadherin to N-Cadherin, losing th intercellular connections stabilizing epithelial tissues for CAMs, enabling connections to fibrous tissues and with this augmenting invasion.