The Significance of Early Confirmatory Extended Biopsy for Prostate Cancer Patients for Active Surveillance

Introduction and Objective: In low-risk prostate cancer (PCa) patients, Gleason sum (GS) upgrade is observed in 30-50% cases compared with radical prostatectomy specimens. This difference could lead to a failure in the treatment of the low risk PCa cases, especially when selecting active surveillance or minimally invasive therapy, such as brachytherapy. To avoid initial misdiagnosis, we performed an early confirmatory biopsy (CB). We assessed the significance of the CB and the rate of upgrade as compared to the initial biopsy.
Materials and Methods: From January 2005 to August 2011, 143 CBs were performed 90 days after the initial diagnosis at Tochigi Cancer Center. Of these cases, the candidates for active surveillance (clinical stage T1c-T2a, less than 3 biopsy cores, 50% or less of any core involved, GS of 6 or lower, 20ng/mL or less of PSA level) were included this study. The biopsy was performed transrectally, and taken with12-18 cores.
Results: We identified 79 cases within these criteria. In the CB, the results were as follows: no cancer cases (included atypical glands); 21 cases (26.6%), GS 5; 4 cases (5.1%), GS6; 24 cases (30.4%), GS7; 23 cases (29.1%), GS8; 3 cases (3.8%) and GS9; 4 cases (5.1%). In the cases with GS6 or less, 3 cases were observed with 3 or more positive core. GS upgrade were seen in the 37.8% and 41.8% cases were excluded from active surveillance criteria. In 23 cases of this cohort, radical prostatectomy was performed. There was no insignificant case in the radical prostatectomy specimen (22 cases; GS of 7 or higher, 1 case; GS5 and tumor volume was over $1cm^3$).
Conclusion: By performing the CB early, we showed that a GS upgrade was seen with a relatively high rate and could identify potentially aggressive cases. Although active surveillance and minimally invasive therapies are selected in the low risk patients, we should recognize the potential for a diagnostic error by the initial biopsy. We have to recognize the limitation of initial prostate biopsy results and early confirmatory extended biopsy is helpful to achieve a proper PCa diagnosis, especially in the low-risk patients.