

# Histologic and Immunohistochemical Features of Pseudohyperplastic Prostatic Adenocarcinoma on Prostatectomy

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**Abstract:** Due to the limited availability of tissue, the diagnosis of prostate cancer on needle biopsies is often difficult. The pseudohyperplastic variant of prostatic carcinoma resembles benign hyperplastic glandular tissue in structure, and it can be misdiagnosed as benign. To better understand pseudohyperplastic adenocarcinoma, we reviewed all radical prostatectomy specimens at Fukuoka University Hospital, Japan taken from January 2006 to December 2010 and identified 14 cases. Data on the following clinical characteristics in these 14 cases of pseudohyperplastic adenocarcinoma were collected: age (mean = 64.6 years; range = 54-72 years), prostate-specific antigen (PSA) level (mean = 9.30ng/ml; range = 3.17-30.10ng/ml), TNM classification (T2a, 1 case; T2b, 1 case; T2c, 11 cases; T3a, 1 case), Gleason score (3+3=6, 3 cases; 3+4=7, 7 cases; 4+3=7, 4 cases). The frequency of histologic features in pseudohyperplastic adenocarcinoma in the 14 cases included: papillary infolding, 100%; nuclear enlargement, 100%; prominent nucleoli, 92.9%; dense pink secretions, 78.6%; crystalloids, 71.4%; blue-tinged luminal mucin, 7.1%; mitosis, 7.1%. Immunohistochemical studies demonstrated negativity of p63 and 34  $\beta$  E12 (i.e., basal cell markers) in 14 (100%) cases and positivity of  $\alpha$ -methylacyl CoA racemase (p504s) in 12 (85.7%) cases. We conclude that careful observation of intraluminal features and nuclear structures on hematoxylin and eosin stains aids diagnosis of pseudohyperplastic adenocarcinoma. Additional immunohistochemical staining for basal cell markers and p504s is helpful when establishing a definitive diagnosis from H&E slides is difficult.

**Key words :** Prostate, Pseudohyperplastic adenocarcinoma, p63, 34  $\beta$  E12, p504s