

Concordance of histological grade between pre-operative biopsy and resection specimen in penile squamous cell carcinoma

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Introduction & Objectives: Histological grade of penile squamous cell carcinoma (PSCC) is an important criteria for selecting patients for groin node dissection with clinically non palpable nodes. We aimed to evaluate the concordance between biopsy and resection histological grade in PSCC at our institute.

Materials & Methods: Institutional ethics committee approved retrospective analysis of H&E slides of 71 cases of PSCC were performed. A single pathologist, who was blinded, reviewed the slides of biopsy and resection of PSCC. A three-tier grading was performed as per WHO/ISUP grading recommendation. Concordance was calculated by using Cohen's kappa coefficient.

Results: Preoperative biopsy diagnosis of well, moderate, and poorly differentiated SCC was made in 19 (21.8%), 38 (39.1%), and 14 (16.1%) cases respectively. In resection, poorly-differentiated SCC was seen in 50 (47.6%) cases. Well and moderately differentiated SCC was seen in 13 (12.4%) and 42 (40.0%) cases respectively. Concordance with final resection grade was best in cases of poorly-differentiated SCC [12 of 14 cases (85.7%)]. Revision of grade from biopsy to resection grade was observed frequently in moderately-differentiated SCC group [22 of 38 (57.89%)]. 21 of these moderately-differentiated SCC were amended to poorly-differentiated on resection while a single case was reclassified as a well differentiated SCC. Moderate agreement was observed for assigning the tumor grade (kappa-0.57;95% CI= 0.4-0.75).

Conclusions: The concordance with final resection histological grade for a biopsy diagnosed poorly-differentiated SCC is the best. Moderately-differentiated grade on a biopsy may be upgraded at resection in a significant proportion of PSCC. A sampling bias in the biopsy procedure reflecting the true heterogeneity of penile cancers may be one of the reasons for discordance, especially when the tumors are large. The knowledge of such discordances should be kept in mind and may aid in clinical decision making.