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Original Paper

Errors in histological grading by prostatic needle biopsy specimens: frequency and predisposing factors

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Abstract

Sampling error is an inherent problem of prostate biopsy. Consequently, there are problems in determining whether a given carcinoma is clinically significant on the basis of biopsy results. This study assesses the factors that predispose to errors in biopsy grading, as well as the dimensions of sampling error due to these factors. Among 187 cases, biopsy grading error was retrospectively related to grade heterogeneity in the prostate and to biopsy-related factors. Clinically relevant biopsy grading errors occurred in a quarter of the cases. Of all grading errors, at least 17% resulted from misinterpretation by the pathologist only. Overall, prostates with grade heterogeneity revealed grading errors twice as frequently as specimens without grade heterogeneity. In most cases, however, grading error resulted from multiple factors, such as the number and length of cores obtained (p<0.05). This was an important finding because the mean core length was only 9.4 mm, whereas the biopsy needle is designed to obtain cores of 15 mm. Moreover, clinically relevant biopsy grading error had occurred in almost half of the cases when the Gleason score was based on a tumour deposit measvring less than 0.5 mm (p<0.05). The clinical consequences of these findings are important. Clinicians should try to obtain at least six biopsies, each 15 mm in length, to minimize grading error. Pathologists should be cautious in reporting Gleason scores based on tumour lesions smaller than 400x total magnification field. Interpretation could be refined, when

necessary, by warning the urologist of the Limitations of the biopsy report. Copyright © 2000 John Wiley & Sons, Ltd.

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