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Difficult-to-manage prostate cancer scenarios that illustrate the pathologist's role in prostate cancer management

Abstract:

Prostate cancer diagnosis primarily depends on the Gleason scoring system, which evaluates histological patterns from 12-core biopsy samples. Although this system has improved in accuracy over time, significant interobserver variability remains-particularly when grading ambiguous features such as cribriform architecture or differentiating between Gleason patterns 3 and 4. Rare histological variants like small cell and intraductal carcinoma add further diagnostic complexity. This variability raises the question: could a double-read system where two pathologists independently assess biopsy samples-enhance diagnostic consistency? To explore this, we conducted a literature review using PubMed and relevant news sources to evaluate the diagnostic impact, financial implications, and logistical feasibility of implementing a double-read approach. Studies indicate that double-reading significantly improves diagnostic precision. For example, a UK study showed a reduction in false positives from 0.4% to 0.06% when specialist uropathologists reviewed cases. Additionally, rare false negatives were better detected in multidisciplinary settings. Despite its benefits, double-reading introduces added labor costs and slower turnaround times. With prostate biopsies contributing $2.5 billion annually to U.S. healthcare expenses, the financial burden may be prohibitive for some institutions. However, selective double-reading for complex cases or integrating AI-assisted pathology could offer cost-effective alternatives. In conclusion, enhancing diagnostic consistency in Gleason grading is crucial for optimal prostate cancer management. While double-reading offers clear clinical benefits, its implementation must consider resource availability. Hybrid strategies using selective review or technology may provide a balanced approach between accuracy and efficiency.

Biography

Drilon Bytyci is a medical student from Kosovo and will graduate from the University of Prishtina. He already holds a Bachelor's degree in Radiologic Technology since 2022. His main interests include radiology, otorhynolaryngology, oncology and medical research. In May, he presented his graduation thesis at the National Conference of Medical Sciences in Tirana, contributing to academic dialogue among peers and professionals. He has a strong interest in evidence-based medicine, integrating current literature into practice and contributing to systematic reviews and data analysis. He is skilled in academic writing, medical imaging interpretation and structured clinical reasoning.