EDITORIAL

Applying prediction models in clinical practice: the importance of fine details

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The primary objective of radical prostatectomy is to excise the tumor while maintaining as much normal function as possible. Hence, the accurate estimation of the tumor's extent is vital for patient consultation and surgical preparation. Extraprostatic extension (EPE), a detrimental pathological feature of prostate cancer, can result in increased rates of positive surgical margins and additional treatment requirements if left unidentified, which may negatively impact long-term outcomes [1].

Heetman et al., in a recent study published in *Prostate Cancer and Prostatic Diseases*, validated several nomograms incorporating MRI in a modern, multicenter cohort of patients who underwent robotic-assisted radical prostatectomy [2]. The necessity for such nomograms to predict EPE is clear, as pathological examination detected EPE in 21.9% of lobes, whereas MRI only identified EPE in 6.5% of lobes. The authors discovered that the tested nomograms had a predictive accuracy between 72.2% and 75.5%. They also evaluated calibration and net benefit based on decision thresholds. The authors' external validation of the nomograms, a crucial step before these tools can be adopted in clinical practice, is praiseworthy. An additional significant finding was the affirmation of the importance of incorporating MRI features in EPE prediction, as these features consistently emerged as strong factors in all models.

While these steps enhance our capacity to refine surgical methods, several critical questions need to be addressed. Firstly, surgeons should understand the length of EPE and the tumor features at the EPE site, which can assist in determining whether partial nerve sparing is suitable for patients with small EPE and low Gleason score [3]. Secondly, although the nomograms' accuracy reached 75.5%, it is still inadequate for risk estimation. The inclusion of more molecular features [4] and innovative imaging techniques [5, 6] could offer additional insights. Thirdly, there is a need to integrate risk estimation into real-time surgery. After creating a three-dimensional model of the prostate and tumor based on preoperative imaging, the risk annotation can be incorporated into augmented reality [7]. Hence, the risk of EPE can be emphasized during surgery, potentially bridging the gap between knowledge and action. Finally, it remains uncertain whether recognizing the risk of EPE will enhance oncological outcomes and quality of life. This uncertainty is a significant limitation of many prediction models. If the model does not relate to patient-relevant clinical outcomes such as tumor recurrence or sexual function, its validation is merely statistical and lacks clinical relevance [8].

In summary, Heetman et al. have enhanced our comprehension of EPE risk estimation and have made significant progress in the complexity of radical prostatectomy. The creation of more detailed information will likely result in a more personalized and individualized treatment approach for our patients. The progression from statistical validation to clinical validation is a continuous process aimed at enhancing the quality of care.

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COMPETING INTERESTS

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ADDITIONAL INFORMATION

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