After decades of study, it remains difficult to accurately quantify the incidence or prevalence of positive surgical margins (PSMs) after radical prostatectomy (RP). Reported percentages of PSMs vary greatly (range: 1% to ≥50%) depending on whether the prostate cancer (PCa) was organ confined (pT2) or not (pT3+) [1]. This is due to a multitude of factors including varying definitions of PSMs, changing pathologic specimen handling and reporting, innovative surgical techniques, stage migration due to prostate-specific antigen testing, and publication bias whereby rates of pT2 or pT3 PSMs reported by high-volume centers of excellence may not be representative of levels seen at the population level. For example, published rates of pT2 PSMs range from 1.3% to 24.2%, whereas a population-based study from Ontario, Canada, found the rate to be 33% [2,3].

Having a standard definition for PSMs and determining what pathologic description is required will certainly clarify the issue and strengthen future studies investigating the impact of PSMs on pT2 and pT3+ disease. The recent publication regarding standardized pathology reporting of PSMs including location, Gleason grade at PSM, length in millimeters, and a standard definition of PSM in organ-confined disease is a big step in the right direction [4].

Evidence to date does not justify the routine intraoperative frozen section analysis of prostatectomy specimens. Although the reported specificity is high (100%), the sensitivity is low (42%), meaning that a significant proportion of PSMs would be missed with this technique [5]. In the current era of cost containment, this does not appear to be justified. If frozen section analysis is done, it is imperative that the final pathology report represent the actual findings and margin status of the extirpated primary specimen.

It is well established that PSMs have a detrimental effect on biochemical recurrence–free survival; however, the impact on hard patient outcomes such as PCa-specific survival or overall survival remains unclear [6]. Studies reporting on these definitive outcomes have been limited by insufficient definition or description of PSMs, confounding by adjuvant or salvage therapies, or inadequate follow-up or events (deaths).

Although not a true systematic review in that the quality of studies, the degree of heterogeneity, and the collated results were not stated, Yossepowitch et al. present a contemporary review of the complex topic of PSMs after RP [1]. Overall, I think we all agree that PSMs in PCa are an adverse oncologic consequence that warrants sincere attempts to limit occurrence, and if present, should be treated according to evidence that best optimizes patient outcome. Limiting PSMs can be approached through recognition of factors that are modifiable and those that are not.

Nonmodifiable risk factors for PSMs are largely due to the inherent biology of the disease. Aggressive cancers with advanced features such as high Gleason sum (8–10), extraprostatic extension (EPE), or seminal vesicle invasion (SVI) will have an increased likelihood of PSMs. Adequate risk stratification incorporating nomograms, patients’ preexisting erectile function, preoperative prostate multiparametric magnetic resonance imaging, and intraoperative findings should all be utilized in decision making regarding wide local excision. The potential for a PSM should not deter urologists from offering high-risk patients the potential for cure with RP. However, an individualized approach, with nerve resection if indicated, is required.
Modifiable risk factors for PSMs include surgical experience and surgical technique. Surgical modality, whether open, laparoscopic, or robot-assisted laparoscopic prostatectomy, consistently appears to be less of a factor in surgical quality than operative experience [7,8]. PSMs can be thought of as a confluence of clinical decision making (ie, when to operate, when to perform nerve sparing) and surgical technique and experience (ie, how to operate). Although the benefit may be debated, rates of PSMs in pT2 disease are increasingly being monitored as an indicator of surgical quality [9]. It is important that this practice take into account urinary and erectile functional outcomes using validated tools to avoid surgeons compromising nerve sparing for a low rate of PSMs. Patients should never be denied operative management because of a fear of PSMs afflicting quality scores.

Another modifiable risk factor for PSMs is nerve sparing at RP. Bilateral nerve sparing is now commonly performed for the majority of men, resulting in improved functional outcomes. This is likely due to increased awareness, robotic surgery promotion, and stage migration resulting in most men having Gleason 6, low-volume disease. However, bilateral nerve sparing may result in increased rates of PSMs if done routinely without adequate risk stratification for features of advanced disease or consideration of a patient’s preexisting erectile dysfunction. Older studies found no increased risk of PSMs with nerve sparing, but there have been few studies investigating this association in the contemporary era, taking into account stage migration and a constant drive to maximize functional outcomes by pushing the envelope of nerve sparing (ie, intrafascial vs interfascial) [10]. Considering the pathologic variability of PCa, it stands to reason that not every man should have a bilateral nerve-sparing prostatectomy. Some patients have nothing to gain and potentially a lot to lose.

The clinical management of a PSM after RP must take into consideration that PCa is a multivariable disease. Adjuvant radiotherapy has been shown in randomized trials to provide benefit to certain patients with adverse pathology [11]. However, decisions for adjuvant therapy must take into account more than simply the presence of a PSM. Gleason sum, EPE, SVI, volume of disease, patient age, and comorbidities must all be factored into the equation when discussing PSM management options with patients. A large proportion of men with PSMs will never have disease progression and, subsequently, have nothing to gain with additional therapy.

In this month’s issue of *European Urology*, Yossepowitch et al. present a contemporary and comprehensive summary of PSMs after RP. Mitigating the impact of PSMs requires an awareness of the modifiable risk factors and an evidence-based approach to utilizing adjuvant or salvage therapies. Standardized reporting of PSMs and future studies exploring long-term survival outcomes with sufficient follow-up and events will provide much-needed clarity.

**Conflicts of interest:** The authors have nothing to disclose.

**References**


