The collaborative management of late urological complications after radiation therapy

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The importance of a multidisciplinary collaborative approach to urological radiation complications is highlighted in a recent study by Ma et al. [1]. Their single-centre retrospective study adds to the existing body of knowledge, and the controversy in the field, regarding radiotherapy complications and toxicities from the urological perspective. The work provides some meaningful information about a subsection of patients presenting to one of the largest urology units in Australia. Furthermore, the study is well critiqued by the accompanying editorial that underscores many of the issues [2]. The Austin urology unit has a strong partnership in uro-oncology with radiation and medical oncology. Consequently it has developed considerable expertise in the management of uro-oncology complications.

Nevertheless, some aspects of this study could be improved to produce more robust data. One such aspect is the number of patients included in the case series, which represented only a 6-month snapshot of patients who had a median (interquartile range) time to onset of complications of 4 (1–9) years. Furthermore, the sample represented only a small fraction of patients from one discipline rather than the entire department, which is made up of multiple disciplines including radiation oncology and medical oncology. The severe complication rates across the oncology disciplines, surgery, chemotherapy and radiotherapy are similar but they differ in their type and timing. Defining late radiotherapy complications can be difficult, particularly without radiation oncology input, including dosimetry, because they can occur years after treatment and can be confused with disease progression or other traumatic events.

Notably, the urology unit represents one of the largest in the state and has a strong collaborative relationship with radiation oncology. Thus, it expertly manages radiotherapy complications from many other large centres besides the Austin centre. This would imply that the published sample was not truly reflective of the patients treated solely by the Austin Radiation Oncology Department. The editorial notes that almost two-thirds of patients were treated with standard external beam radiotherapy. It also highlights that <20% were treated with intensity-modulated radiotherapy, a superior technique that has been shown to reduce toxicity, which is further diminished with image-guided radiotherapy [2]. The Austin centre has treated all patients with prostate cancer with intensity-modulated radiotherapy and image-guided radiotherapy for more than a decade. Consequently, measures of frequency, incidence and prevalence; that is, how common the complications are, cannot be calculated because the denominator in terms of patients at risk and period of time is unknown. As late effects of radiotherapy occur over many years and radiotherapy is used frequently for pelvic malignancies, including the most common male cancer (prostate cancer), the denominator is likely to be large.

Highlighting information on the fistula rates was also potentially misleading, given a previous analysis and audit of prostate radiotherapy at the Austin Uro-Oncology department [3]. This showed a low toxicity profile and a low fistula rate among patients that was consistent with the published literature, which is 0.1% [4], not dissimilar to the reported 30-day mortality rate after prostatectomy [5] and similar to the severe urinary stricture rate after external beam radiotherapy alone.

These severe complication figures would be more useful and more lessons would be learned if their occurrence were examined in light of the concomitant surgical procedures or endoscopic interventions [6]. Severe late radiation complications are more common when external beam radiotherapy is associated with prostatectomy and brachytherapy. Sometimes, despite best intentions, irradiated tissues do not behave normally as a result of incoherent vessels, poor oxygenation and a greater propensity for scarring and are therefore more prone to severe strictures and fistulae. Hence instrumentation and endoscopic procedures, including TURP, bladder neck incisions and rectal biopsy, should be undertaken with the necessary consideration of these risks. The radiotherapy environment is often
compromised and there is a small risk that such interventions will precipitate a major complication, such as severe stricture and fistula. Appropriate care should be taken and meticulous technique applied to radiotherapy-affected tissues as wound healing can be impaired and there is a risk of radiation necrosis of surrounding tissues. These collaborative lessons have been well learnt in other areas, such as dental work after head and neck radiation and surgery after preoperative radiotherapy for rectal cancer.

In summary, the existence of late urological complications after radiotherapy reported by Ma et al. should not be a reason to potentially dismiss the value of radiotherapy in the management of prostate cancer, given the low overall toxicity profile reported by our group. While it was perceived that radiotherapy complications are more common than previously thought for the short time period defined, the true incidence cannot be calculated without the appropriate denominator. Previous department audits have shown the rate to be low, consistent with the existing literature, and similar to severe complication rates after surgery and chemotherapy.

Radiotherapy has been shown to be an effective treatment of prostate cancer, similarly to surgery [7]), both in the non-metastatic setting and recently at the oligometastatic stage [8]. If anything, the study by Ma et al. highlights the importance of maintaining accurate patient records, the need for more ongoing clinical trials and the establishment of strong multidisciplinary exchange among health professionals as to why these variations of frequency may be occurring and how we could work together to minimize and manage the potential adverse effects of all uro-oncology treatments. This is particularly important with radiotherapy as serious toxicity can occur years after treatment, unlike surgery where the severe complications occur during or shortly after the procedure. Urologists play the primary and crucial role in the expert treatment of urological radiotherapy side effects, thereby supporting radiation oncology; however, just as they manage severe urological complications referred from fellow urologists and other surgeons, collaboration and discussion with a radiation oncologist is also important to ensure correct diagnosis and appropriate documentation, and that other medical treatments, such as hyperbaric oxygen, are considered.

Conflicts of Interest
None declared.

References
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