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## Title Page

Title: The Collaborative Management of Late Radiation Urological Complications

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### The Collaborative Management of Late Radiation Urological Complications

The importance of a multi-disciplinary 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 provided 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 associated editorial that underscores many of the issues [2]. The Austin urology unit has a strong partnership in uro-oncology with radiation and medical oncology. Subsequently it has developed considerable expertise in the management in uro-oncology complications.

Nevertheless, some aspects could be improved to produce more robust data. One such aspect was the number of patients included by the case series, which represented only a 6-month snap-shot of patients that had a median (interquartile range) time to onset of complications of 4 years (1-9 years). More so, the sample represented only a small fraction of patients from one discipline rather than the entire department, which was made up of multiple disciplines including radiation oncology and medical oncology. The severe complication rate across the oncology disciplines, surgery, chemotherapy and radiotherapy is similar but 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. 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 were treated with standard external beam radiotherapy. It also highlights that less than 20% were treated with intensity modulated radiotherapy (IMRT), a superior technique that has been shown to reduce toxicity, that is further diminished with imaged guidance (IGRT) [2]. In contrast, the Austin has treated all prostate cancer patients with IMRT and IGRT for more than a decade. Consequently, measures of frequency, incidence and prevalence i.e. “how common” cannot be calculated as the denominator in terms of patients at risk and period of time is unknown. As radiotherapy late effects occur over many years and radiotherapy is utilised frequently for pelvic malignancies, including the most common male cancer (prostate cancer), the denominator is likely to be large.

Highlighting information expressing the fistula rates were also potentially misleading given that past analysis and audits of prostate radiotherapy at the Austin’s Uro-Oncology department [3]. This showed a low toxicity profile and a low fistula rate amongst our patients consistent with published literature which is 0.1% [4]; not dissimilar to the 30 day mortality following prostatectomy [5]. Similarly, with the severe urinary strictures following external beam radiotherapy alone.

These severe complication figures would have been better served and lessons learned if their occurrence were examined in light of their 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 due to incoherent vessels, poor oxygenation and an inflated propensity for scarring and thus are more prone to severe strictures and

fistulae. Hence instrumentation and endoscopic procedures including TURP, bladder neck incisions and rectal biopsy require necessary thoughtfulness to be applied. The environment is often compromised. There is a small risk that such an intervention will precipitate a major complication such as severe stricture and fistula.

Appropriate care and meticulous technique should be taken with radiotherapy affected tissues as wound healing can be impaired and one risks radiation necrosis of surrounding tissues. These collaborative lessons have been well learnt in other areas such as dental work following head and neck radiation and surgery following rectal cancer pre-operative radiotherapy.

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

Radiotherapy has been shown to an effective treatment of prostate cancer, similar to surgery [7]) both in the non-metastatic setting and recently in the oligometastatic stage [8]. If anything, the study showcased the importance of maintaining vigilant patient records, the need for more ongoing clinical trials and the establishment of strong multidisciplinary exchange amongst health professionals as to why these variations maybe occurring and how collectively, we could work together to minimise and manage these 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. The 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 from fellow urologists and other surgeons, collaboration and discussion with a radiation oncologist is preferential to ensure

the correct diagnosis and documentation is made and that other medical treatments such as hyperbaric oxygen is considered.

Conflicts of interest

None disclosed

References

- [1] Ma JL, Hennessey DB, Newell BP, Bolton DM, Lawrentschuk N. Radiotherapy-related complications presenting to a urology department: a more common problem than previously thought? *BJU Int.* 2018 May: **121 Suppl 3**:28-32
- [2] Kneebone A, Van Gysen K. Is radiotherapy the work of the devil? *BJU Int.* 2018 May: **121 Suppl 3**:6-7
- [3] Sia J, Joon DL, Viotto A, et al. Toxicity and Long-Term Outcomes of Dose-Escalated Intensity Modulated Radiation Therapy to 74Gy for Localised Prostate Cancer in a Single Australian Centre. *Cancers.* 2011: **3**:3419-31
- [4] Pan HY, Jiang J, Hoffman KE, et al. Comparative Toxicities and Cost of Intensity-Modulated Radiotherapy, Proton Radiation, and Stereotactic Body Radiotherapy Among Younger Men With Prostate Cancer. *Journal of clinical oncology : official journal of the American Society of Clinical Oncology.* 2018 Mar 21:JCO2017755371
- [5] Pereira JF, Golijanin D, Pareek G, et al. The association of age with perioperative morbidity and mortality among men undergoing radical prostatectomy. *Urologic oncology.* 2018 Apr: **36**:157 e7- e13
- [6] Osterberg EC, Vanni AJ, Gaither TW, et al. Radiation-induced complex anterior urinary fistulation for prostate cancer: a retrospective multicenter study from the Trauma and Urologic Reconstruction Network of Surgeons (TURNS). *World J Urol.* 2017 Jul: **35**:1037-43

[7] Hamdy FC, Donovan JL, Lane JA, et al. 10-Year Outcomes after Monitoring, Surgery, or Radiotherapy for Localized Prostate Cancer. *N Engl J Med*. 2016 Oct 13; **375**:1415-24

[8] Parker CC, James ND, Brawley CD, et al. Radiotherapy to the primary tumour for newly diagnosed, metastatic prostate cancer (STAMPEDE): a randomised controlled phase 3 trial. *Lancet*. 2018 Oct 18:

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