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In regard to 'What is the quality of hydrogel spacer insertions? and which patients will benefit? A literature review'

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Letter to the Editor

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Dear Editor-in-Chief,

We read the article entitled 'What is the quality of hydrogel spacer insertions? and which patients will benefit? A literature review' by Drabble and Drury-Smith with great interest.[1] Their conclusions support previous studies assessing the role of hydrogel spacer (HS) in increasing distance between the prostate and rectum, resulting in rectal dose reduction in prostate radiotherapy. Despite many studies that have evaluated the effectiveness of HS insertion in prostate cancer radiotherapy over the last decade,[2-5] it still remains an active area of research. Although conducting a systematic review is necessary to better understand the clinical benefit of HS insertion, we believe that the article fails to acknowledge some important issues that need consideration.

There is not enough information in the article for someone to replicate their study. What were the key words that were chosen? There are a number of studies evaluating the impact of HS during prostate radiotherapy with regard to dosimetric and clinical benefits, as well as procedure-related toxicity that could be included in the study. For example, in a prospective single-blind randomised phase III trial, Hamstra et al. have reported that late rectal toxicities significantly reduce in HS arm.[3] In contrast, in a non-randomised prospective trial, Whalley et al. did not observe any significant difference in rectal toxicities between patients with and without HS except for grade 1 late rectal toxicity ($p = 0{\cdot}04$).[4]

In addition, a huge lack of criticism and the pros and cons are not discussed in an adequate manner. Some aspects of toxicity with spacer application, that are, well-reported cases of rectal ulceration, bacterial prostatitis, rectal discomfort and pain and perineal abscess are not mentioned at all.[2] There are several situations that successful insertion of HS does not achieve, including injection into the rectal lumen, unsuccessful prostate-rectum spacing at the time of hydrodissection and previous pelvic radiation likely due to fibrosis and scarring.[2] Furthermore, previous study shows that a repeated hydrogel injection is feasible prior to prostate re-irradiation.[6] A contraindication of HS injection is the presence of imaging abnormalities posterior to the prostate.

With regard to post-prostatectomy radiotherapy, HS can implant in well-selected patients.[7] Of note, there is a potential risk of displacing tumour cells underneath an interstitial gel or balloon during the implantation procedure. Therefore, one can conclude that the prostatic fossa and HS should include within the clinical target volume (CTV) to reduce the potential risk of the remaining tumour cells at the anterior rectal wall. Also, using molecular imaging approaches alone or together with transperineal biopsy can well detect the location of local recurrence.

We agree with authors who reported there is conflicting view on the use of HS on high-risk patients.[1] There are three potential routes of tumour spread to the rectal wall, including direct invading through Denonvilliers' fascia and infiltration into the rectum, extension by the lymphatic and seeding on biopsy.[8] It should be noted, however, that Denonvilliers' fascia, as a thick capsule, is an effective barrier for the spread of tumour cells into the rectal wall. In the present time, rectal involvement by prostate cancer is clinically rare. Direct rectal invasion occurs in pT4 prostate cancer, whereas Yeh et al. inserted HS in non-metastatic patients with T1–T3 tumors.[9] Displacing tumour cells underneath an interstitial HS during the implantation procedure may be most relevant. Especially in patients with intermediate and high-risk cancers that present with an increasing incidence of transcapsular tumour spread with increasing risk factors, the dose to the anterior rectal may be crucial for tumour cell killing of those cells beneath the device. Of note, the anterior rectal wall receives more than 50 Gy even with a HS in-place.[10] Up to now, there are no data on compromised prostate-specific antigen (PSA) relapse rates. Thus, this area of research needs to be studied further.

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Conflict of Interest. The authors declare that they have no conflicts of interest.

Research Involving Human Participants and/or Animals. This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent. Consent is not required for this type of study.

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