



# Transperineal Rectal Spacer Injection and Fiducial Marker Placement Prior to Radiotherapy for Localized Prostate Cancer - A Regional Hospital Experience

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## Objective

Hypofractionated stereotatic ablative body radiotherapy (SBRT) for localized prostatic cancer with rectal spacer and fiducial marker has been shown to achieve good clinical outcome with reduced gastrointestinal toxicity. Our aim is to review on the results of rectal spacer injection and fiducial marker placement in a regional hospital.

## Patients & Methods

Patients with low to intermediate risk prostatic cancer agreed for prior rectal spacer and fiducial marker placement in PYNEH since April 2022 were reviewed. Patient characteristics, spacer and fiducial marker placement method, post-placement imaging, prostate-specific antigen (PSA) level, and early complications were summarized and presented.

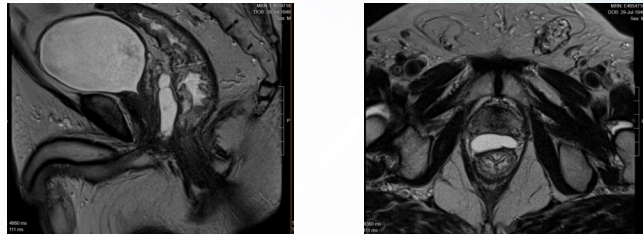
## Results

Twelve patients with mean follow up of 6 months (ranged 1 to 12 months) were included. Two spacer materials, Barrigel® (n=10, 83%) and SpacerOAR™ Hydrogel (n=2, 17%), were used. Perirectal separation distance on MRI was 11-17mm (mean 14mm). All patients with available PSA data (n=9) showed early PSA decline at 3 months (n=8) or 6 months (n=1). One (8%) reported early gastrointestinal toxicity with rectal bleeding. Follow-up CT scans demonstrated spacer resolution of Barrigel at 6 months vs. SpaceOAR hydrogel at 12 months. No early complications related to rectal spacer injection was reported. A fiducial marker was lost in two patients (17%), potentially due to placement of marker in proximity to urethra.

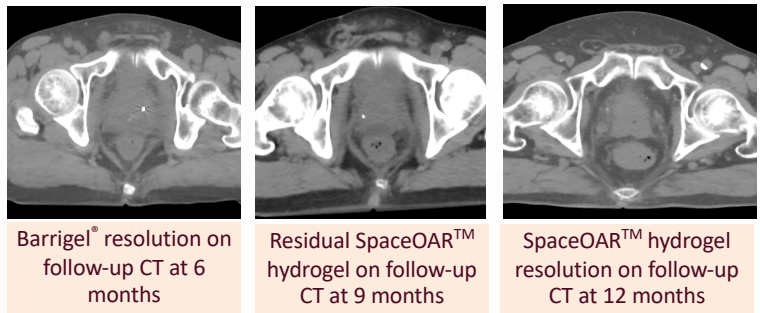
## Conclusion

Rectal spacer and fiducial marker placement is a safe technique to allow hypofractionated SBRT. It warrants future assessment of long-term outcomes. Special caution should be paid to the resolution time between different rectal spacer materials and transperineal freehand technique of fiducial marker placement to avoid placement too close to midline.

### Rectal spacer injection



MRI illustrating ideal symmetrical recto-prostatic separation covering whole prostatic length with the injection of rectal spacer.

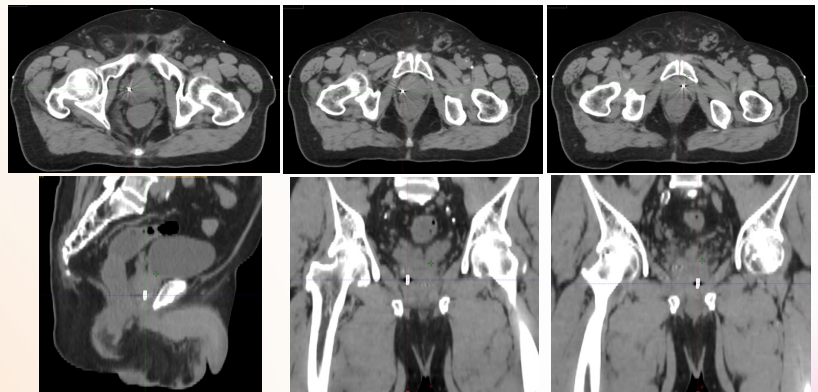


Barrigel® resolution on follow-up CT at 6 months

Residual SpaceOAR™ hydrogel on follow-up CT at 9 months

SpaceOAR™ hydrogel resolution on follow-up CT at 12 months

### Fiducial marker placement



Three fiducial markers were placed ideally over right apex peripheral zone, left mid-gland peripheral zone and right apex peripheral zone for treatment verification at different planes.



Importance to avoid placement of marker in proximity to urethra to ensure markers are not subsequently lost to voiding