

## MP61-17: Initial multicenter experience utilizing an absorbable radiopaque hydrogel for patients with invasive bladder tumors

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### Abstract: MP61-17

#### Introduction and Objectives

Since localization of bladder tumors can vary significantly based on bladder volume and capacity, enthusiasm over targeted radiotherapy has been muted. As a result, radiotherapy as a definitive treatment option for patients with invasive bladder cancer is underutilized in the United States. In this context, we sought to evaluate the utility of a novel absorbable hydrogel as a fiducial marker designed for simple cystoscopic application and stability within the bladder wall.

#### Methods

Patients with muscle-invasive bladder cancer refusing to undergo radical cystectomy underwent cystoscopic application of the hydrogel marker (TracelT Tissue Marker, Augmenix, Waltham, MA) under either local or general anesthesia. Either immediately after or several weeks following transurethral resection of bladder tumor, a hydrogel marker was injected via a 1ml syringe through standard 22G or 23G cystoscopic needles. Consisting of iodinated polyethylene glycol hydrogel particles, the marker was injected into the submucosa or muscular layer around the periphery of the resected tumor.

#### Results

Eight patients from five institutions were included in this initial investigation. An average of  $3.6 \pm 0.9$  ml were used in each patient, with average ease of application rated as  $4.7 \pm 0.5$  (on a scale of 1-5). There were  $7.8 \pm 1.5$  markers placed around resection bed peripheries, with each marker averaging  $0.32 \pm 0.05$  ml. All cystoscopic procedures were performed without complications or related adverse events. Qualitative scoring of CT visibility (on a scale of 1-5) found the hydrogel to be highly visible with a score of  $4.6 \pm 0.5$  (on a scale of 1-5). The markers improved tumor delineation during planning, daily bladder localization and a tighter cone down during radiotherapy.

#### Conclusions

Initial results demonstrate ease of use and the creation of visible stable markers around the tumor margins. Improved bladder tumor visibility should result in smaller bladder irradiation fields, potentially contributing to bladder preservation.

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