



## Photoselective Vaporization of the Bladder for the Management of Radiation Cystitis—Technique and Initial Outcomes

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<b>OBJECTIVE</b>	To describe our technique using photoselective vaporization of the bladder (PVB) for the management of hemorrhagic cystitis and initial results of the procedure in 12 patients.
<b>MATERIALS AND METHODS</b>	An audit of theater records of a single surgeon was performed to identify patients who had undergone PVB for the management of radiation cystitis. Rigid cystoscopy was performed. Ureteric catheters were placed and active bleeding sites were targeted to optimize vision. Ablation was commenced using the vaporize function. When lasering around delicate structures, the coagulation function was used. Ureteric catheters remained in situ for 24 hours. An 18Fr Foley catheter was placed. When urine output was clear, continuous bladder irrigation was ceased. Both ureteric catheters and the Foley catheter were removed before the 24-hour mark.
<b>RESULTS</b>	Twelve patients were identified. Eight patients had previously required blood transfusion secondary to bladder hemorrhage. Nine patients were successfully treated and 2 patients saw improvement in hematuria but required a repeat procedure at 3 weeks postoperatively. Four patients underwent hyperbaric oxygenation as consolidative therapy. One patient was unsuccessfully treated and underwent cystectomy. There were no mortalities. No patients sustained bladder perforation or damage to surrounding structures.
<b>CONCLUSION</b>	Radiation cystitis can be life threatening and remains a challenge for the urologist with traditional intravesical treatments, such as aluminum or formalin, having variable results. We present an alternate technique using PVB to ablate the bladder mucosa, with good results. Consolidation with hyperbaric oxygen therapy may be considered. Our study is limited by the small sample size, and the presence of bilateral ureteric catheters leaving the bladder free from urine may impact immediate postoperative outcomes. These initial results are promising; however, further prospective evaluation with a larger cohort and pre- and postoperative cystograms would enable better evaluation of this technique as a definitive management option for hemorrhagic cystitis. UROLOGY 123: 295, 2019. © 2018 Published by Elsevier Inc.

Chronic hemorrhagic cystitis occurs in approximately 5% of patients after pelvic radiotherapy<sup>1</sup> and is associated with a 44% mortality rate despite definitive urinary diversion and cystectomy.<sup>2</sup> Classic management options, including hyperbaric oxygenation, intravesical aluminum, or formalin, have variable results.<sup>1</sup> Photoselective vaporization of the bladder boasts the

advantage of selectively ablating blood vessels while sparing surrounding structures.<sup>3</sup>

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