The Use of Multiple Foley Balloon Catheters for Treating Life-Threatening Radiation Induced Hemorrhagic Cystitis

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Abstract
Life-threatening hematuria from radiation induced hemorrhagic cystitis remains a difficult clinical problem for the urologists. We report the use of multiple inflated Foley balloon catheters for compression on the bleeding bladder mucosa via the suprapubic and urethral routes in a patient with hemorrhagic shock due to intractable bleeding of radiation induced hemorrhagic cystitis. This method is simple and quick to stop bladder bleeding for life saving.

Keywords: Hemorrhagic cystitis; Radiation; Foley balloon catheter

Introduction
Hemorrhagic cystitis is a known complication of pelvic irradiation that occurs in up to 6.5% of patients after treatment for cervical cancer [1]. Hemorrhage from radiation induced cystitis can range from mild hematuria that can be treated with bladder irrigation, cystoscopic fulguration or hyperbaric oxygen therapy to severe bladder hemorrhage that necessitates multiple blood transfusions and requires more invasive therapy such as formalin instillation, vascular embolization or cystectomy and/or urinary diversion.

Here we describe a novel technique using multiple Foley balloon catheters to control life-threatening hematuria in a case with radiation induced hemorrhagic cystitis.

Case Report
A seventy-six year-old woman was diagnosed with ovarian carcinoma 20 years ago and underwent a total abdominal hysterectomy and bilateral oophorectomy followed by external beam radiotherapy (1.5 Gy/fractions, 5 days/week for 4 weeks). The patient was brought to our emergency department because of life-threatening bleeding of hemorrhagic cystitis. On arrival, the blood pressure was 85/58 mm Hg, the pulse 125 beats per minute, the respiratory rate 24 breaths per minute, and the oxygen saturation was 90% while the patient was breathing ambient air. Hemoglobin level was 3.5 g/dl. Tracing her medical history, she had persistent symptomatic gross hematuria that occurred in up to 6.5% of patients after treatment for cervical cancer [1]. Hemorrhage from radiation induced cystitis can range from mild hematuria that can be treated with bladder irrigation, cystoscopic fulguration or hyperbaric oxygen therapy to severe bladder hemorrhage that necessitates multiple blood transfusions and requires more invasive therapy such as formalin instillation, vascular embolization or cystectomy and/or urinary diversion.

Because of the concern for recurrent bladder bleeding, cystectomy was performed on day 21, 2016.

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Figure 1: The use of multiple inflated Foley balloon catheters to control intractable bladder haemorrhage.
arteries has been described [2]. Cystectomy remains the final treatment option for patients with severe radiation cystitis which is resistant to conservative treatments [3].

We report the use of multiple inflated Foley balloon catheters for compression on the bleeding mucosa of bladder via the suprapubic and urethral routes in a case with life-threatening radiation induced hemorrhagic cystitis. This method is simple and quick to stop bladder bleeding for life saving. It is easy to performed by all urologists without any special equipment in an emergent situation.

Conclusion

The application of multiple inflated Foley balloon catheters for life saving in the case with intractable hematuria is a simple and quick method to stop bleeding.

References