

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/radcr

Case Report

Bleeding after interstitial brachytherapy for cervical cancer requiring embolization

Vanya Aggarwal, BS^a, Anthony Chuprin, BS^b, Abhimanyu Aggarwal, MD, MBA^{b,*}, Harlan Vingan, MD^b, Edwin Crandley, MD^b

^a George Washington University School of Medicine, 2300 I St NW, Washington, DC 20052, USA

^b Eastern Virginia Medical School, 825 Fairfax Ave, Norfolk, VA 23507, USA

ARTICLE INFO

Article history:

Received 30 June 2018

Revised 17 July 2018

Accepted 18 July 2018

Keywords:

Interstitial brachytherapy

Cervical cancer

Bleeding

Embolization

ABSTRACT

Cervical cancer is the third most common cancer among women worldwide and is usually managed with chemoradiation in advanced disease. This case presents a 41-year-old female with locally advanced cervical cancer who underwent combination intracavitary/interstitial brachytherapy after chemoradiation for local disease control. At her fifth brachytherapy session, one of the interstitial needles was malpositioned and lead to vascular injury with significant blood loss. She subsequently underwent emergent embolization of a branch of the right obturator artery with immediate clinical improvement and no complications. This is the first reported case of vascular injury from an interstitial brachytherapy needle that required arterial embolization for hemostasis.

© 2018 The Authors. Published by Elsevier Inc. on behalf of University of Washington.

This is an open access article under the CC BY-NC-ND license.

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Introduction

Cervical cancer is the third most common cancer among women worldwide, but improvements in screening methods and the development of the human papilloma virus vaccine have decreased its incidence by 70% over 50 years [1]. Early stage cervical cancer, defined as stage IA and IB1 based on the International Federation for Gynecology and Obstetrics staging classification, is primarily treated with modified radical hysterectomy rather than primary radiation therapy (RT) [2,3]. For patient with advanced disease, defined stage IB2 to IVA, the primary treatment is RT with concurrent cisplatin

chemotherapy. For patients with para-aortic nodal disease, treatment is usually extended field radiation therapy with concurrent cisplatin therapy [4–6].

Brachytherapy allows for delivery of internal radiation therapy localized to the cervix with relative sparing of the surrounding tissues, and has been shown to significantly increase cancer-specific and overall survival rates in patients with advanced disease [7]. There are 2 main techniques for delivering brachytherapy that may be used concurrently for cervical cancer: intracavitary and interstitial. Intracavitary brachytherapy is delivered using an intrauterine tandem with either vaginal ovoids, vaginal cylinders, or vaginal rings [8]. Interstitial brachytherapy provides targeted therapy for larger masses

Conflicts of Interest: None.

* Corresponding author.

E-mail addresses: vanya.aggarwal5@gmail.com (V. Aggarwal), chupria@evms.edu (A. Chuprin), abhiaggawalmd@gmail.com (A. Aggarwal), vinganmd@gmail.com (H. Vingan), crandley@evms.edu (E. Crandley).
<https://doi.org/10.1016/j.radcr.2018.07.033>

1930-0433/© 2018 The Authors. Published by Elsevier Inc. on behalf of University of Washington. This is an open access article under the CC BY-NC-ND license. (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

that may exhibit significant local spread or lower vaginal involvement, and is performed by placing needles using free-hand or a template [8]. We present the first reported case of vascular injury from interstitial needle placement during a brachytherapy session requiring embolization in a patient with locally advanced cervical cancer.

Case presentation

Institutional Review Board exemption was obtained for this case report. A 41-year-old female presented with several months of progressive menorrhagia as well as pelvic and back pain. On physical exam, she was noted to have a 7 cm circumferential necrotic cervical lesion with pathology showing squamous cell carcinoma. Positron emitted tomography-computed tomography (CT) demonstrated a 6.3 × 5.5 cm hypermetabolic mass with necrotic center and numerous bilateral pelvic and peri-aortic hypermetabolic lymph nodes. She was diagnosed with FIGO IIB pelvic and para-aortic lymph node positive squamous cell carcinoma of the cervix. She subsequently underwent extended field external beam radiation therapy with concurrent cisplatin. Postchemoradiation magnetic resonance imaging showed persistent but decreased size of the tumor with bilateral parametrial involvement. It was recommended that she undergo 5 sessions of high dose rate (HDR) brachytherapy.

Brachytherapy was delivered with a tandem and ovoid/interstitial hybrid technique utilizing the Utrecht applicator (Elekta, Stockholm, Sweden) and between 8 and 10 interstitial needles per treatment. Prior to each brachytherapy treatment, she was taken to the operating room for placement of the brachytherapy applicator and interstitial needles under anesthesia, then transferred to the radiation oncology department for CT-based 3D treatment delivery planning. The first 4 sessions were tolerated without any complications. During the fifth session, the applicator with interstitial needles was placed in the operating room in standard fashion without immediate complications. On routine CT-based 3D treatment planning, it was noted that the brachytherapy applicator geometry was inadequate for treatment, and thus the applicator was removed. Upon removal of the applicator, brisk vaginal bleeding was immediately encountered. Multiple attempts to control the bleeding with vaginal packing and tamponade were unsuccessful. There was an estimated blood loss of 700 ml and she was transfused with 4 units of packed RBCs but continued to experience vaginal bleeding. She then underwent emergent angiography to identify and embolize the source of bleeding.

A pelvic arteriogram showed extraluminal contrast extravasation in the right pelvis (Fig. 1). Right hypogastric angiogram demonstrated extraluminal contrast extravasation originating from one of the branches of the right hypogastric artery (Fig. 2). Selective catheterization and angiogram of the right uterine artery revealed no contrast extravasation (Fig. 3). Selective catheterization and angiogram of the third anterior division of the right hypogastric, the right obturator artery, showed a cephalad branch in communication with the extravasated contrast accumulation (Fig. 4). This branch was

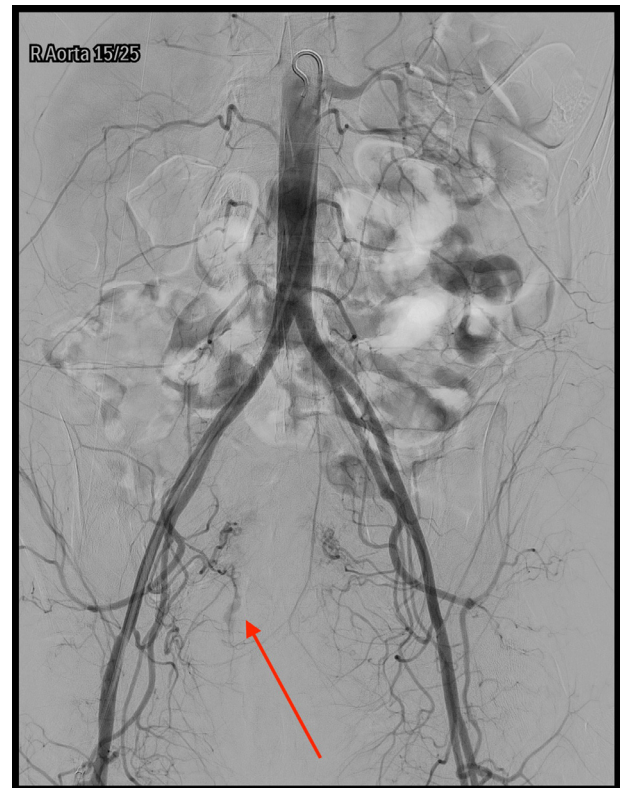


Fig. 1 – Pelvic arteriogram with arrow pointing to extraluminal contrast extravasation in the right pelvis.

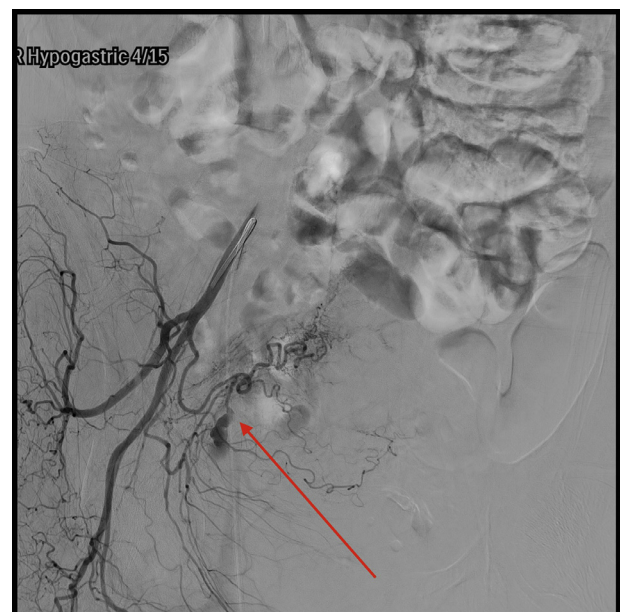


Fig. 2 – Right hypogastric angiogram with arrow pointing to extraluminal contrast extravasation originating from one of the branches of the right hypogastric artery.

Download English Version:

<https://daneshyari.com/en/article/10222572>

Download Persian Version:

<https://daneshyari.com/article/10222572>

[Daneshyari.com](https://daneshyari.com)