SMGroup

SM Journal of Case Reports

Case Report

# Adult Case Report and Literature Review: Internal Iliac Artery Blowout Post Pelvic Radiation for Rectal Cancer

**Mehulkumar Joshi*, Patty Hughes, Andrea Zimmern and Timothy Wu**

*St. John's Episcopal Hospital, Far Rockaway, NY, Trinitas Regional Medical Center, Elizabeth, NJ, USA*

**Article Information**

Received date: Mar 15, 2017
Accepted date: Apr 07, 2017
Published date: Apr 13, 2017

***Corresponding author**

Mehulkumar Joshi, Department of Surgery, St. John's Episcopal Hospital, Far Rockaway, NY, Trinitas Regional Medical Center, Elizabeth, NJ, USA, Tel: +1-718-869-8822; Email: mjoshido@gmail.com



**Abstract**

Treatment for advanced rectal cancer via radiation therapy is associated with significant complications. Complications of pelvic radiation to the rectum include hemorrhagic proctitis, rectovaginal fistulas, and anorectal strictures. Major vessels of the pelvis are susceptible to radiation injury as well. Stenosis and occlusions of these vessels are reported more often than bleeding and pseudo aneurysms.Here we discuss a case of major iliac artery injury after multimodality treatment for advanced rectal cancer.

## Case Description

Our case study describes a 55 year old female with history of rectal cancer status post low anterior resection with adjuvant chemotherapy and radiation 3 years ago presented to ER with profuse vaginal and rectal bleeding. This bleeding was thought to be caused from radiation proctitis and decompressing through fistula.Patient was seen by surgical service and bedside Flexible Proctoscopy was performed with control of hemorrhage via APC coagulation and clipping (Figures 1A and1B). Despite above interventions, patient continued to have copious bleeding from vagina and rectum. Patient became hypotensive and required continuous transfusion of blood products. Interventional radiology was consulted and pelvic angiogram was performed. It showed gross extravasation and bleeding from the left internal iliac artery, which was then embolized. Left external iliac artery was also embolized to prevent particle embolization [1] (Figures 1C and 1D). After embolization patient was monitored closely and resuscitative efforts were continued until patient was stabilized. Shortly after the IR procedure patient developed acute left lower extremity ischemia. Patient was evaluated and taken to operating room emergently. Left axillary-femoral bypass graft was performed to restore blood flow to her left lower extremity. Patient tolerated the procedure well with good return of blood flow. She recovered well post operatively with reperfusion and full function of her left lower extremity. Patient tolerated the procedure well with good return of blood flow. She recovered well post operatively with reperfusion and full function of her left lower extremity [2,3].

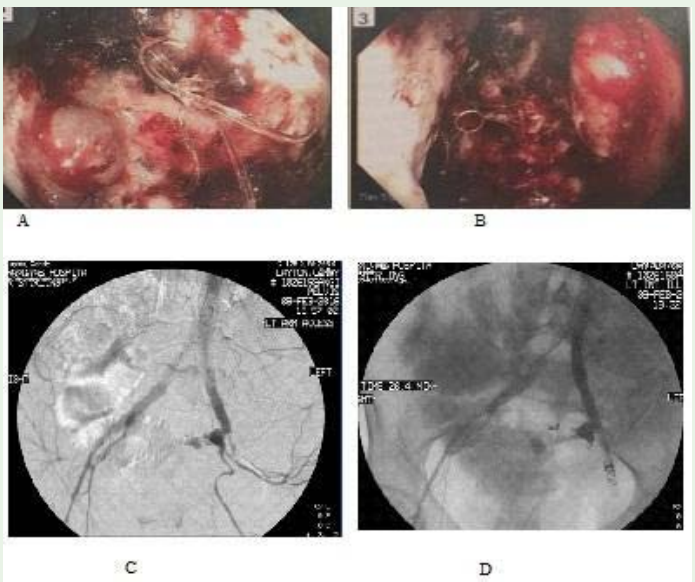


**Figure 1:** A,B: Vagina and Rectum showing sutures from previous surgery and oozing friable tissue with clips from scope. C: Gross extravasation and bleeding from the left internal iliac artery, which was then embolized. D: Left External iliac artery embolized to prevent particle embolization.

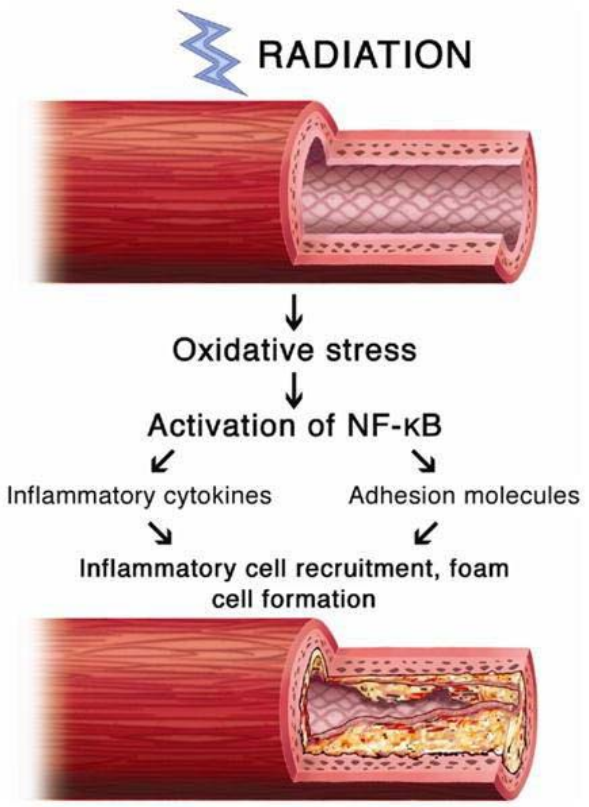


**Figure 2:** Proposed Mechanism of Involvement of NF-κB in Radiation-Induced Vascular Disease.

## Discussion

Radiation therapy is commonly used modality for treatment of pelvic malignancies such as rectal cancer.Radiation Induced Arterial Injury (RIAI) was first described by Thomas in which stenosis and obstruction of the great vessels was reported [4].

Initial injury takes place at the endothelial cell layer of the arteries post radiation. As shown in Figure 2 there is an upregulation of NF-κB in irradiated blood vessels, which contributes to expression of inflammatory genes. Expression of these genes leads to prolonged accelerated atherosclerosis. The manifestation of atherosclerotic process in these vessels includes stenosis, thrombosis, and aneurismal dilatation. The treatment of arterial lesions from prior radiation is similar to atherosclerotic disease unless there is poor long term prognosis associated with malignancy.There are varieties of endovascular and surgical procedures used to treat radiation induced arterial injury[5]. In cases where endovascular treatment is unsuccessful prompt open surgical intervention such as bypass. It is an efficient technique that allows the surgeon to perform a functional extra-anatomic bypass. The two major advantages of such a technique are on the one hand the rapidity of vascular occlusion, which can be a lifesaving maneuver, and on the other hand the possibility of avoiding surgery in an irradiated field [6,7].

Arteriography is a valuable technique in locating the site of bleeding and providing treatment at the same time. Endovascular treatments such as embolization, stenting, grafts and even coiling can be done. In our case patient was taken to Interventional radiology first to embolize the bleeding vessel. Patient developed complication from angiography so was taken to operating room for open bypass procedure from which patient did well post operatively [5].

## Conclusion

Prompt diagnosis of brisk rectal bleeding in a patient with previous pelvic radiation is critical. Understanding the diagnostic and therapeutic benefits of a pelvic angiogram for a patient suspected to have radiation induced injury can help in early management and reducing mortality.

### References

1. de Baere T, Ousehal A, Kuoch V, Sapoval M, Lagrange C, Roche A. Endovascular management of bleeding iliac artery pseudoaneurysms complicating radiation therapy for pelvic malignancies. AJR Am J Roentgenol. 1998; 170: 349-353.
2. Gordon PH, Nivatvongs S. Principles and practice of surgery for the colon, rectum, and anus. (3rd Edn.). 2007; Informa Healthcare, New York, USA.
3. Lawson JA. Surgical treatment of radiation induced atherosclerotic disease of the iliac and femoral arteries.J Cardiovasc Surg (Torino). 1985; 26: 151-156.
4. McCready RA, Hyde GL, Bivins BA, Mattingly SS, Griffen WO Jr. Radiation-induced arterial injuries. Surgery. 1983; 93: 306-312.
5. Tiesenhausen K, Tomka M, Baumann A. Rupture of internal iliac artery aneurysm -- a rare cause of life-threatening rectal bleeding. Chirurg. 2003; 74: 1167-1169.
6. Veraldi GF, Genco B, Governa M, Gilioli E, Zecchinelli MP, Minicozzi AM, et al. Spontaneous rupture of the femoral artery after radiotherapy: a case report. Chir Ital. 2009; 61: 205-211.
7. Weintraub NL, Jones WK, Manka D.Understanding radiation-induced vascular disease. J Am Coll Cardiol. 2010; 55: 1237-1239.