

# The Role of Uterine Artery Embolization in Cervical Cancer – Single Case Report

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## ABSTRACT

*Massive vaginal bleeding represents one of the emergencies that the gynecologists have to deal with. When unresponsive to the haemostatic treatment (local or iv), the bleeding can be stopped by using the uterine artery embolization. It provides visualization of the bleeding site and enables targeted, minimally invasive therapy to achieve hemostasis. We present a case of a patient with cervical cancer associated with massive vaginal bleeding and the beneficial effects of the uterine artery embolization in the therapy management.*

**Keywords:** cervical cancer, pelvic hemorrhage, embolization

## INTRODUCTION

**T**here are many interventional techniques that can be used to aid the gynecologists/oncologists in caring for their patients in the acute setting. Bleeding related to cervical cancer is amenable to embolization.

Uterine artery embolization is a technique used by interventional radiologists that has been available for 20 years in the treatment of various gynecologic and obstetric conditions with massive, uncontrollable hemorrhage. The

efficiency of selective embolization of one or both uterine arteries, is clinically proven by the hemorrhage's cease (1).

We present the case of a patient with cervical cancer and hemorrhage treated with the uterine artery embolization. □

## CASE REPORT

**A** 35 year old patient was admitted in our hospital for a cervical tumor associated with massive vaginal bleeding and pelvic pain. Two month prior to the hospital admission the

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patient started having abnormal vaginal bleeding. The patient had no significant personal or family history of cervical cancer. Investigations performed two weeks earlier in another clinical setting (clinical examination and cervical biopsies) had led to the diagnosis of cervical squamous cancer.

The current clinical examination showed massive cervical bleeding without blood clotting.

The blood pressure was 90/50 mmHg and the heart rate was 100 beats per minute.

Laboratory tests showed a severe secondary anemia (hemoglobin 7 mg/dl).

Transvaginal ultrasound and the MRI suggested the presence of a 32x45x27 mm intramural mass on the posterior wall of the cervix with infiltrative prolongations in the lateral and anterior walls of the cervix without secondary determinations in the abdominal organs and with 2 images of external iliac lymph nodes present (13 mm on the right side and 14 mm on the left side). The current clinical examination and the paraclinic investigations led us to the suspicion of IIB stage cervical cancer.

A cervix biopsy was performed under local anesthesia and a hemostatic treatment (local and iv adrenostasine, fitomenadione, ethampilat) was started.

The blood transfusion (2 units) was initiated in order to correct the anemia.

After two days of hemostatic treatment, the vaginal bleeding was still present, so the embolization of the uterine artery was performed until stasis of blood flow was demonstrated. The uterine artery embolization is an interventional radiology technique, minimum invasive, with a short post embolization recovery time (Figure 1). In this case the radiologist decided to use an unilateral brachial approach, which has as ad-

vantages the fact that the patient can be mobilized immediately after the intervention and only one puncture is needed. After a local anesthesia with xiline, the embolospheres associated with a contrast substance were injected, over selectively catheterizing every vessel that fed the tumor.

The vaginal bleeding stopped within 24 hours after the intervention.

The conservative treatment described proved efficient in relieving the patient's symptoms and was assisted by the good collateral blood supply which characterizes the pelvic region. The patient accused pelvic pain, treated with anti-inflammatory and antibiotic drugs.

External radiotherapy was afterwards performed using 26,2 GY, associated with curietherapy.

Six weeks after the radiotherapy, we were able to proceed to the surgical treatment, represented by a complete lymphadenocolpohysterectomy (Wertheim technique). The histopathological result highlighted the presence of a squamous cervical cancer. □

## DISCUSSION

Cervical hemorrhage can be a difficult problem during cervical cancer management. The cervical bleeding can increase the morbidity either by a secondary anemia and its complications either by haemorrhagic shock.

A standard procedure was the ligation of the hypogastric artery, which has proved its efficiency in controlling massive bleeding in cervical carcinoma, postoperative bleeding, trauma and obstetric bleeding refractory to local therapy. The reported success rates of hypogastric artery ligation have been widely variable, ranging from 40% to 100% in contemporary series

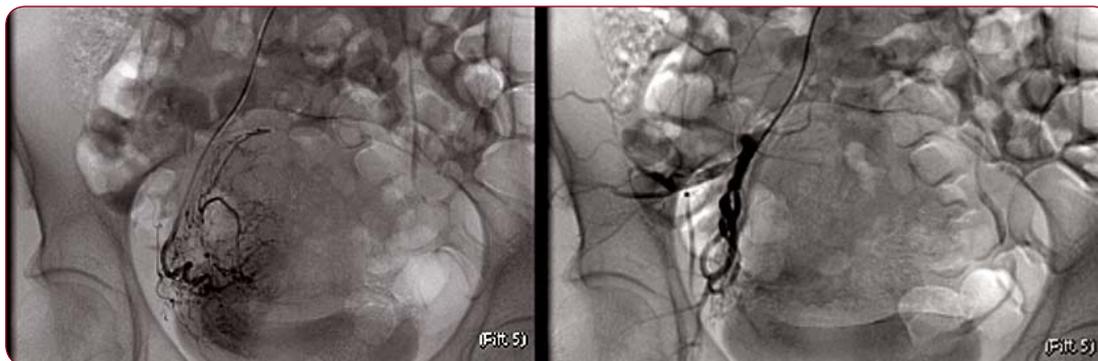


FIGURE 1. Pelvic arteriography: before and after embolization

(2-5). The procedure's limits are represented by the highly deformed pelvic anatomy (due to radiotherapy or to the recurrence of cancerous tissue) and the critically ill patients. In these cases, the morbidity can be increased by the difficult situations that can appear during the operation and the anesthetic complications (6).

The first reported use of transcatheter arterial embolization in obstetrics and gynecology was the control of intractable pelvic hemorrhage in patients with gynecologic malignancies in the mid 1970s (7,8). This procedure was accepted in a short period of time because of its low mortality and morbidity rates. The embolization of anterior branch of the internal iliac artery may easily prevent the bleeding in the pelvic region, but presents several undesirable complications such as: bladder ischemia, vesicovaginal fistula, necrosis of the gluteus and neurological deficiencies in lower extremities. This complications may only be reduced via superselective embolization of uterine artery.

Several studies have been performed in order to underline the beneficial role of this procedure. Pisco et al (9) performed transcatheter embolization of the internal iliac arteries in 108 patients with uncontrolable bleeding in pelvic neoplasm (uterus in 39, ovary in 16, urinary bladder in 50 and prostate in 3). This study results show complete control of the hemorrhage in 69 % of the patients and partial control in 21% of the patients. They were unable to reduce the need for transfusion in 11 patients, 6 of whom had only unilateral embolization due to anatomic reasons. Yamashita et al (5) reported 100% temporary control of bleeding in 17 patients with malignant neoplasm. Mihmanli et al (10) showed successful cessation of vaginal hemorrhage by arterial embolization in 6 patient with gynecologic malignancies. Serdac and others (11) reported 100% temporary control of bleeding in 8 patients with terminal stage cervical cancer, 2 of whom had developed vesicovaginal fistula (it was not clear whether it

was due to the embolization or recurring invasion of the cervical cancer).

Based on this limited reports, it appears that arterial embolization plays a significant role in urgent control of massive bleeding in gynecologic malignancies.

Transcatheter arterial embolization is a safe and effective treatment for massive bleeding in cervical cancer (12,13). Immediate postembolization clinical examinations demonstrated that the bleeding effectively stopped in all cases. After this procedure, the need for blood transfusion was eliminated in all of the cases while the potential complications related to blood transfusion are prevented.

Arterial embolization advantages:

1. the ability to achieve rapid control of hemorrhage,
2. lower incidence of rebleeding (this technique produces more distal occlusions than the surgical ligation),
3. improvement in general condition of the patients,
4. the decreased in tumor size gradually appears due to declined feeding of the tumor.
5. reduced intraoperative bleeding during the consecutive surgical intervention and implies minimum risks and unwanted effects.

The most common side effects observed are severe pain related to the ischemia of tumor tissue. These side-effects are temporary and can be stopped by administering simple analgesics to the patient. □

## CONCLUSIONS

Genital bleeding is a major cause of morbidity and mortality in many gynecological disorders and its management represents a challenge for gynecologists. The purpose of arterial embolization is to raise the quality of life and betterment of those patients by minimizing surgical morbidity through the use of less invasive method of arterial embolization.

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