
GYNAECOLOGY

Transcatheter Arterial Embolization as a Life Saving Procedure in Intractable Bleeding from Advanced Cervical Cancer

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ABSTRACT

Objective To evaluate the effectiveness of transcatheter arterial embolization (TAE) to stop intractable bleeding from advanced cervical cancer.

Setting Department of Obstetrics and Gynecology, Faculty of Medicine, Siriraj Hospital, Mahidol University.

Subjects Thirty four patients with intractable bleeding from advanced cervical cancer which could not be stopped by vaginal packing seen between January 1988–December 1997

Intervention TAE was performed to all the subjects using local anesthetic method, catheters were introduced percutaneously via axillary or femoral arteries into any pelvic vessels, followed by embolization of gelfoam at or closed to the bleeding point.

Results TAE successfully stopped severe vaginal bleeding in thirty two patients (94.12%) in single episode. One of them (2.94%) had to receive additional procedure including electrical cauterization, suturing of bleeding point and gelfoam packing in vagina and the other (2.94%) needed the second TAE. All the patients had no serious complications from this procedure.

Conclusion TAE is an effective and safe method for intractable bleeding from advanced cervical cancer.

Key words : arterial embolization, hemorrhage carcinoma of uterine cervix

Treatment

Thirty one of thirty four (61.76%) were introduced catheters via right femoral arteries, 12/34 (35.30%) and 1/34 (2.94%) were introduced catheters via left axillary arteries and left femoral arteries, respectively. The arteries which were embolized were shown in table 3. The arteries were completely occluded in 26 cases (76.74%), while the other 8 cases (23.53%) were partially occluded. The mean time that was used

in the procedure was 2.62 ± 0.63 hours, maximum 3.7 hours, minimum 1.7 hours. 32/34 (94.12%) achieved bleeding controlled in single episode, while one case (2.94%) needed the second embolization, and others had to receive additional procedure including electrical cauterization, suturing bleeding point and gelfoam packing in vagina. The mean time during the patients needed vaginal packing was 2.93 ± 3.84 days, maximum 14 days, minimum 0 day.

Table 3. Distribution of the patients classified by embolized arteries

Arteries	Cases (%)
Bilateral internal iliac arteries	11 (32.37%)
Bilateral uterine arteries	9 (26.47%)
Bilateral anterior division of internal iliac arteries	4 (11.76%)
Unilateral internal iliac artery plus unilateral anterior division of internal iliac artery	2 (5.88%)
Unilateral anterior division of internal iliac artery	2 (5.88%)
Unilateral internal iliac artery	2 (5.88%)
Unilateral uterine artery	2 (5.88%)
Unilateral internal iliac artery plus unilateral uterine artery	1 (2.94%)
Bilateral internal pundental arteries	1 (2.94%)

Complications

During treatment, five cases (14.71%) developed fever about 38° - 39.5°C and one case (2.94%) developed fever and buttock pain. All were managed by symptomatic treatment. None had serious complications.

Follow up

Radiotherapy was carried out in all patients

according to stage of disease, except two recurrent cases, which one had received complete radiation and the other had received radiation plus chemotherapy before embolization, received only symptomatic treatment. Twelve cases lost to follow up after complete radiation, one case lost during radiation after bleeding completely stopped. Twenty one cases came for follow up appointment. The survival range was between 1–124 months, mean 28 months.

Discussion

In this study intractable bleeding from cervical cancer was more common in advanced stage, most common in stage IIIb (67.65%), and none in stage I. According to the pathologic findings, the most common type is exophytic (66.67%), and the least common type is infiltrative. This is due to lesion of exophytic type is very fragile and can lead to profuse hemorrhage with minimal trauma.⁽⁴⁾ Squamous cell carcinoma, moderately differentiated type was commonly found in this study. This may be due to the fact that it is the commonest cell type in cervical cancer.⁽⁵⁾

Uncontrolled bleeding encountered with cervical cancer is a distressing and often fatal event. In addition to the conventional treatment, vaginal packing, the other special methods are utilized for life saving such as internal iliac artery ligation, pelvic radiation or selective transcatheter arterial embolization.

Because most of these patients have extensive disease, the assessment to the vessels is more difficult. Usually the patients have unstable hemodynamic status which would place them at high risk for anesthesia and surgery. By angiographic technique, it is demonstrated that there is reconstruction of distal internal iliac artery from collateral circulation after proximal internal iliac artery ligation for post partum hemorrhage.⁽⁶⁾ Thavarasah et al⁽⁷⁾ reported 4 in 14 obstetric cases failed in use of internal iliac artery ligation to control post partum hemorrhage.

Radiotherapy has been reported as an effective method to stop intractable bleeding from cervical cancer.^(2,4) Large dose hypofractionated radiotherapy is considered superior to conventional radiotherapy for hemostatic purpose but that dose makes relatively higher bladder and bowel complication rate.⁽⁴⁾ In our study, although there were nine cases who were given radiotherapy before embolization, yet they needed TAE.

TAE has the advantage as followed. Firstly, TAE can be applied in high risk cases because of its minimal invasion. Secondly, an accurate bleeding site can be identified angiographically. And thirdly, TAE can identify vessels in the patients which have

extensive disease.

There were many reports demonstrated successful use of TAE to stop bleeding from cervical cancer^(6,8,9) and in palliative care.^(10,11) Embolization should be directed at arteriole, at the precapillary long enough to diminish the possibility to rebleeding. For this reason we used gelfoam in our patients. It is nonantigenic, nonirritating and thought to disappear in 4 to 6 weeks.⁽⁹⁾

Our study demonstrated 34 intractable bleeding cases which controlled by TAE. Thirty two (94.12%) achieved hemostasis in single episode, one needed reembolization and the other had to receive additional procedure including electrical cauterization, suturing bleeding point and gelfoam packing in vagina. There was incomplete occlusion in eight cases, but only one of eight needed reembolization. This showed that although complete occlusion might not achieve due to technical difficulty but bleeding could be stopped.

Potential complication of TAE was inadvertent embolization on non-target organ. Broadley et al⁽¹⁰⁾ reported one case developed left homonymous hemianopia after TAE. Other complications included flu-like illness due to tumor necrosis, arteriovenous fistula, hematoma and abscess formation at the puncture site. In this study, 5/34 (14.71%) developed fever about 38°C-39.5°C between 2-6 days, and 1/34 (2.94%) developed fever and gluteal pain which might be due to the blood vessels that were embolized having included superior gluteal artery.

In conclusion, transcatheter arterial embolization is an effective and safe method for intractable bleeding from advanced cervical cancer.

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