Case Report

Hemostatic Control for Intractable Bleeding from Advanced Cancer of The Uterine Cervix by Collagen Fleece Coated with Fibrin Glue : A Report of 3 Cases

Chaiyod Thirapakawong, M.D.*
Perapong Inthasorn, M.D.*
Supatra Sangruchi, M.D.**
Issaracha Suphanit, B.Sc.*

Abstract : **We report 3 cases of advanced cervical cancer with intractable vaginal bleeding. They had all been initially managed by vaginal packing which had failed on 2 occasions. In all cases, bleeding could be controlled by a collagen fleece coated with fibrin glue (Tacho Comb®) without adverse side effect. Applying a collagen fleece coated with fibrin glue may be an alternative method of bleeding control in selected patients.**

เรื่องย่อ : **การยับยั้งภาวะเลือดออกจากมะเร็งปากมดลูกระยะลุกลาม โดยใช้แผ่นคอลลาเจนประกบกับกาวไฟบริน : รายงานผู้ป่วย 3 ราย**

ชัยยศ ธีรผกาวงศ์ พ.บ.*, พีรพงศ์ อินทศร พ.บ.*, สุพัตรา แสงรุจิ พ.บ., อิสสระชา สู่พานิช วท.บ.***

**ภาควิชาสูติศาสตร์-นรีเวชวิทยา, **ภาควิชารังสีวิทยา, คณะแพทยศาสตร์ศิริราชพยาบาล, มหาวิทยาลัยมหิดล, กรุงเทพมหานคร 10700.*

สารศิริราช 2544; 53: 34-37.

รายงานผู้ป่วยมะเร็งปากมดลูกระยะลุกลาม 3 ราย ซึ่งมีเลือดออกทางช่องคลอดปริมาณมากและไม่สามารถห้ามเลือดด้วยการใส่ผ้ากดห้ามเลือดในช่องคลอด 2 ครั้ง ภาวะเลือดออกทางช่องคลอดในผู้ป่วยทั้ง 3 ราย ถูกยับยั้งได้ด้วยการใช้แผ่นคอลลาเจนประกบกับกาวไฟบรินในการห้ามเลือดจากปากมดลูกในผู้ป่วยมะเร็งปากมดลูก ซึ่งวิธีนี้อาจเป็นทางเลือกอีกทางหนึ่งในการรักษาผู้ป่วยดังกล่าว

**Department of Obstetrics and Gynecology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700.*

Received November 24, 2000
Accepted December 28, 2000

INTRODUCTION

In Thailand, cervical cancer is the most common cancer in women. In Siriraj Hospital, the incidence in 1999[1] was 24.64% of all female cancer. The common presenting symptoms are leukorrhea and abnormal vaginal bleeding from cervical lesions. In these cases, vaginal packing is used as the conventional procedure to stop bleeding. If it is not successful patients might be treated by other methods such as internal iliac artery ligation, radiotherapy or transcatheter arterial embolization (TAE). The success rate of internal iliac artery ligation is questionable due to the collateral blood supply of the pelvic area. A surgical approach might be impossible because of advanced stage of the disease or the patient's unstable condition. Both procedures need highly experienced specialists. Stopping bleeding by radiotherapy has a high complication due to the high dose delivered[2].

We were interested in a collagen fleece with fibrin glue (Tacho Comb®). It consists of a sheet of collagen, coated on one side with human fibrinogen, bovine thrombin, bovine apotinin and riboflavin. When the fleece is in contact with blood, fibrinogen is converted to fibrin by thrombin and clotting is initiated. The apotinin prevents the activation of fibrinolytic factors, thus stabilizing the forming clot directly. The collagen fleece ifself acts as an inducer of platelet aggregation and platelet release reaction which prevents the liftoff of fibrin located on its structure. There have been many studies that have reported successful hemostasis using this method in many fields of surgery such as hepatic surgery, vascular surgery[3], cranio-facial and orthognathic surgery[4] but never in this field. We would like to use this collagen fleece in order to stop bleeding from the lesion in patients with advanced cervical cancer.

The technique of application of a collagen fleece with fibrin glue is summarized as follows. The patient is placed in lithotomy position. The vaginal packing gauze is removed and then the active side of collagen fleece (the yellow side) is applied to the cervix and pressed with a sponge to conform to the surface to which the adhesive sheet was fixed. After a 3 to 5 minute interval during which the collagen fleece is kept in place under pressure, the pressure was gradually released to complete the procedure. (Figure 1 and 2)

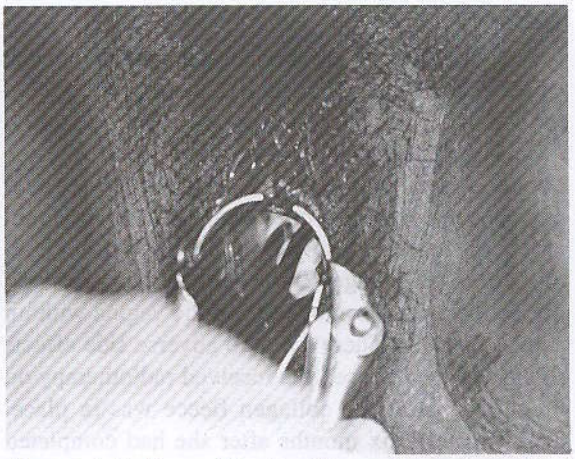

Figure 1. Yellow side of collagen fleece is applied to the cervix and pressed with a sponge.

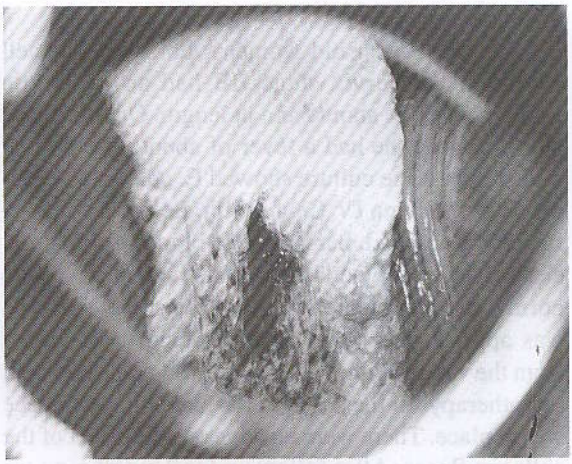

Figure 2. Cervix that is applied by collagen fleece.

This report presents 3 cases which we studied. All patients had advanced cervical cancer with intractable bleeding from the cervical lesion which failed respond to vaginal packing twice in 48 hours. They all had a normal chest film, intravenous pyelography, cystoscopy and proctoscopy before the study.

Case 1

A 45-year-old women with squamous cell carcinoma of cervix stage IIIB had an ulcerative growth of the cervix about 5 cm in length with tumor invasion of the lower third of the vagina. Before a collagen fleece was applied, her complete blood count, urinalysis, blood electrolyte, liver function test, renal function test were normal except for anemia. After the collagen fleece was applied, the vaginal pack could be removed from the vagina without active bleeding. There were no adverse side effects of the collagen fleece. She received radiotherapy on the 7th day after the collagen fleece was in place. Unfortunately, six months after she had completed radiotherapy, she developed pulmonary and bone metastases. Up til now, she has received 3 courses of chemotherapy (Carboplatin).

Case 2

A 43-year-old woman with squamous cell carcinoma of cervix stage IIB had an exophytic growth of cervix about 5 cm in length. On the 1st day of admission, she had a fever of about 38°c and an mid stream urine culture showed E. coli > 10^5 CFU/ml. She was given IV. Cephazolin. Before a collagen fleece was applied, her complete blood count, blood electrolyte, liver function test, renal function test were normal except for anemia. After the collagen fleece was applied, the vaginal pack could be removed from the vagina without active bleeding. She received radiotherapy on the 5th day after the collagen fleece was in place. There were no adverse side effect of the collagen fleece. After follow up for 7 months, no tumor recurrence has been noted.

Case 3

A 34-year-old woman with squamous cell carcinoma of cervix stage IIB had an exophytic growth of cervix about 5 cm in length. Before a collagen fleece was applied, her complete blood count, urinalysis, blood electroyte, liver function test, renal function test were normal except for anemia. After the 1st collagen fleece was applied, the vaginal pack could be removed. She received radiation therapy on the 2nd day after the collagen fleece was in place. On the 4th day she had active bleeding from the cervical lesion again. A 2nd collagen fleece was applied and the bleeding was stopped without vaginal packing. There were no adverse side effect of the collagen fleece. After follow up for 6 months, no tumor recurrence has been noted.

On the 7th day of application, the cervical lesions of all cases were inspected and there was no residual collagen fleece present nor was there any cervical bleeding.

DISCUSSION

Uncontrolled bleeding encountered in patients with cervical cancer is a distressing symptom.It may even be fatal. In addition to the conventional treatment, vaginal packing, other special life-saving methods can be utilized such as internal iliac artery ligation, pelvic radiation or selective transcatheter arterial embolization.

Because these patients have extensive disease, the assessment of the vessels is very difficult. Usually these patients have an unstable hemodynamic state which places them at high risk for anesthesia. Furthermore, it has been demonstrated using angiography that there is reconstruction of the distal internal iliac artery from a collateral circulation after proximal internal iliac artery ligation[5].

Large dose hypofractionated radiotherapy is considered superior to conventional radiotherapy for hemostatic purpose but that dose induces a relatively higher bladder and bowel complication rate[6].

TAE needs a highly experienced radiologist and there are not many such specialists in Thailand. There are some potential complication of TAE from inadvertent embolization on a non-target organ[7]. Any procedure that interferes with the blood supply of the cervix may lead to hypoxia of the tumor which may make it less responsive to radiotherapy.

We are interested in a collagen fleece with fibrin glue to stop intractable bleeding from advanced cervical cancer because it is easy and ready to use, doesn't need a specialist and can be used in a provincial hospital.

This product has been used in various surgical fields such as for stopping bleeding from craniofacial and orthognathic surgery[4], for stopping bleeding from urological, hepatic, vascular and ENT surgery[3], for stopping bleeding from thoracic surgery[8], for treating cerebro-spinal fluid fistula[9] and for treating pneumothorax from cystic fibrosis[10].

In our study bleeding could be controlled in all 3 cases by using collagen fleeces with fibrin glue (Tacho Comb®). The safety of this product has been confirmed in many reports[3,8,11]. In our study there were no adverse side effect nor complication from this product.

The rate of resorption of Tacho Comb® may vary with the amount used and the site of application. The collagen used clinically has been reported to be resorbed in animal studies (canine liver, brain, rabbit kidney) in 3 months[12]. In our study, of the 3 patients examined by inspection on the 7th day, we were unable to detect any evidence of Tacho Comb® on inspection persisting in the areas which it had been applied by inspection. We would like to study this further in other cases and we hope that this procedure may also be applicable and useful in patients with intractable bleeding from advanced cervical cancer in the future.

CONCLUSION

Although we could control bleeding from advanced cervical cancer by using a collagen fleece with fibrin glue, clinical use in advanced cervical cancer should be further investigated by randomized control trial to draw a more firm conclusion.

References :

1. Tumor Registry Siriraj Cancer Center, Faculty of Medicine Siriraj Hospital, Mahidol University: Statistical Report, 1999.
2. Kraiphibul P, Srisupundit S, Kiatgumjaikajorn S, Pairachvet V. The experience in using whole pelvic irradiation in management of massive bleeding from carcinoma of the uterine cervix. J Med Assoc Thai 1993; **76 (Suppl 1):** 78 – 81.
3. Agus GB, Bono AV, Mira E, Olivero S, Peilowich A, Homdrum E, et al. Hemostatic efficacy and safety of TachoComb in surgery. Int Surg 1996; **81:** 316 – 19.
4. Boonvisut S, Aojanepong C, Jatutong V, Kasemsuthi P, Chu-ongsakul S, Osatalert W, et al. The application of fibrin glue layered collagenic fleece plastic surgery. Siriraj Hosp Gaz 1996; **48:** 37 – 40.
5. Lin Y-C, Kudelka AP, Lawrence D, Verschraegen CE, Kavanagh II, Edwards CL, et al. Transcatheter arterial embolization for the control of life-threatening pelvic hemorrhage in patient with locally advanced cervix carcinoma. Eur J Gynaec Oncol 1966; **17:** 480 – 83.
6. Biswal BM, Lal P, Rath JK, Mohanti BK. Hemostatic radiotherapy in carcinoma of the uterine cervix. Int J Gynecol Obstet 1995; **50:** 281 – 85.
7. Broadley KE, Kurowska A, Dick R, Platts A, Tookman A. The role of embolization in palliative care. Palliat Med 1995; **9:** 331 – 35.
8. Hollaus P, Pridun N. The use of Tachocomb in thoracic surgery. J Cardiovasc Surg 1994; **35 (Suppl 1 to 6):** 169 – 70.
9. Nistor RF, Chiari FM, Maier H, Hehl K. The fixed combination of collagen with components of fibrin adhesive – A new hemostyptic agent in skull base procedures. Skull Base Surg 1997; **7:** 23 – 30.
10. Current aspects of thoracoscopic fibrin bonding in paediatric surgery. Minim Invas Med 1996; **7:** 55 – 64.
11. Izbicki JR, Kreusser T, Meier M, Prenzel KL, Knoefel WT, Pasolick B, et al. Fibrin-glue coated collagen fleece in lung surgery-experimental comparison with infrared coagulation and clinical experience. Thorac Cardiovase Surgeon 1994; **42:** 306 – 9.
12. McDonald TO, Britton B, Brogmann AR, Robb CA. Bio-compatibility and bioabsorption of microfibrillar collagen hemostat in experimental animals. Toxicology 1977: 37 – 44.