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Original Article

A new facilitating technique for postpartum hysterectomy at full dilatation: Cervical clamp

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Abstract

Background: Postpartum hysterectomy is a life saving emergency procedure in the management of uncontrollable severe maternal hemorrhage that every obstetrician should be closely acquainted with despite developments in medical and non-surgical interventions for obstetric hemorrhage. It can be difficult to detect the real boundaries of the cervix at full effacement and dilatation in patients who undergo emergency hysterectomy after vaginal delivery.

Methods: Hereby we propose a simple and effective method to ease the operation by placing two atraumatic ring forceps to the anterior and posterior sides of the cervix during the preoperative vaginal examination and leave the two ring forceps while taking the patient into surgery. The boundary of the vagina and cervix will be determined with the help of the ring forceps intraoperatively, which are already placed before the operation.

Results: Cervical clamp technique was successfully performed in four cases underwent to emergency postpartum hysterectomy due to uncontrollable postpartum atony. There were no postoperative complication and re-exploration for the persistent hemorrhage. Postoperative FSFI scores of the cases were 26.7, 27.4, 30.3 and 30.7.

Conclusion: Taking extra vaginal tissue from the lower level of the cervix may be avoided and the last stage of the total hysterectomy may be facilitated by this simple technique with ensuring of bleeding management.

Keywords: Cervical clamp; Postpartum hemorrhage; Postpartum hysterectomy

1. Introduction

The most common preventable causes of maternal mortality leading to postpartum hemorrhage (PPH) deaths involve inadequate surgical hemostasis.[1] The vast majority of the hysterectomy indications after vaginal birth is uterine atony with uncontrollable hemorrhage that do not respond to the conservative practices. Other risk factors for PPH include abnormal placentation, coagulopathies, retained placenta, precipitated or prolonged labor, fetal macrosomia or multiparity, maternal obesity and previous primary PPH.[2] Incidence of emergency postpartum hysterectomy (EPH) varies from 0.1 to 0.3 per 1000 vaginal deliveries with a declining ratio due to the developments in standard obstetric care.[3,4] Although the incidence is low, it represents a major operation in modern obstetric practice as it is directly related with maternal morbidity and mortality.[5] Despite the obstetric hysterectomy technique shows similarity with the abdominal hysterectomy in gynecologic cases, it holds specific surgical difficulties because of physiological and anatomical changes that occur during

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pregnancy. Subtotal hysterectomy is technically simpler, safer in terms of urinary tract injury and needs less skill when compared to total hysterectomy. However, bleeding from the lower segment and insufficient hemorrhage control may conduce to total hysterectomy. Difficulties in identifying the borders of the effaced cervix in women who have labored at full dilatation conclude with operative problems in total hysterectomy.[6,7] It can lead to incomplete removal, excessive loss of vaginal tissue and increased risk of urethral injury when doing total hysterectomy due to the loss of cervico-vaginal junction and the limited exposure caused by heavy bleeding.

2. Methods

2.1. Technique: cervical clamp

Determining the borders of the cervix surgically in emergency hysterectomies after vaginal delivery can be a challenging issue. It could be easy to detect the boundaries of the cervix with full effacement and dilatation with our technique. The clamps (ring forceps), which does not harm the tissue, are placed to the cervix with full effacement and full dilatation by the 6th and 12th o'clock positions during the vaginal examination in lithotomy position while evaluating the postpartum hemorrhage (Fig. 1).

If the decision inevitably turns to hysterectomy despite all the efforts and alternative methods routine hysterectomy procedures are swiftly followed. Bilateral round ligament, ovarian ligament and uterine arteries are clamped, cut and ligated with the use of Haney clamps. The bladder and rectum are dissected off the lower end of the uterus and subsequently priorly placed clamps are reached. After determining the boundaries of the cervix and vagina with the help of the ring forceps, cardinal ligaments clamped, cut and ligated. An incision made right above the anterior and posteriorly palpated clamps, clamps are removed transvaginally and the uterus is extracted totally after anterior and posterior incisions are closed.

3. Results

Retrospective clinical data of four cases underwent to emergency postpartum hysterectomy due to postpartum atony and massive maternal hemorrhage after vaginal delivery were given below to support the concept of using cervical clamp.

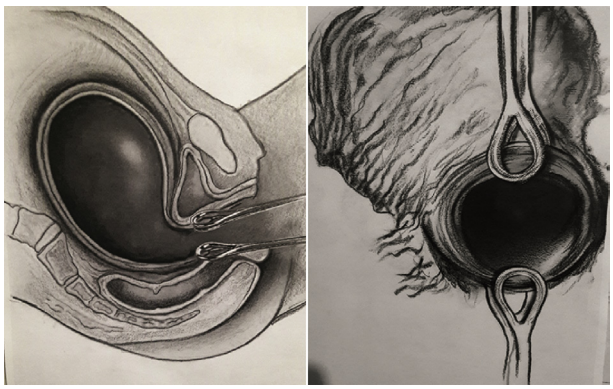

Fig. 1. Placing cervical clamps preoperatively at full dilatation.

Two cases were presented with postpartum atony subsequent to partus precipitatus. First of those two was 24 years old, primigravida nulliparous woman. Cervical clamps were placed during the transvaginal examination and left in place to assist the laparotomy or hysterectomy if needed by determining the borders of the cervix. Emergency laparotomy was performed due to the abundant hemorrhage resistant to medical interventions. Total hysterectomy decision was taken after rapid decrease in hemoglobin levels from 15, 1 mg/dl to 4,95 mg/dl and the failure of ligamentum ovarii proprium and uterine artery ligation. 5 units of whole blood, 16 units of erythrocyte suspension, 16 units of fresh frozen plasma and 6 units of thrombocyte suspension were required to obtain hemodynamic stability.

The second case with partus precipitatus was 41 years old, gravid 8 and para 6. Total hysterectomy decision was taken after rapid decrease in hemoglobin levels from 10, 2 mg/dl to 4, 35 mg/dl and the failure of ligamentum ovarii proprium, uterine artery and hypogastric artery ligation. 6 units of erythrocyte suspension and 6 units of fresh frozen plasma were required.

Third case was 34 years old, gravid 3 para 2 and presented with fetal macrosomia. Total hysterectomy decision was taken after rapid decrease in hemoglobin levels from 11, 7 mg/dl to 5, 5 mg/dl and the failure of ligamentum ovarii proprium, uterine artery, hypogastric artery ligation and B-Lynch suture. 3 units of whole blood, 6 units of erythrocyte suspension and 6 units of fresh frozen plasma were required.

Fourth case was 36 years old gravid 5 para 3 and presented with prolonged second stage of labor. Total hysterectomy decision was taken after rapid decrease in hemoglobin levels from 12, 4 mg/dl to 3, 5 mg/dl and the failure of ligamentum ovarii proprium, uterine artery, hypogastric artery ligation and B-Lynch suture. 3 units of whole blood, 8 units of erythrocyte suspension, 8 units of fresh frozen plasma and 6 units of thrombocyte suspension were required to obtain hemodynamic stability.

All four cases were required postoperative care in intensive care unit for 5, 3, 3 and 5 days, respectively. Newborn of the first case required 13 days of NICU. There were no postoperative complication and re-exploration for the persistent hemorrhage. All cases were discharged uneventfully. The FSFI scores were obtained at 6th month in the first and second cases (12 months did not lapsed yet) and at 12th month in the third and fourth cases. FSFI scores of the cases were 26.7, 27.4, 30.3 and 30.7, respectively.

4. Discussion

We propose a simple and effective method to ease determining the borders of the cervix in the emergency postpartum hysterectomy by placing two atraumatic ring forceps to the anterior and posterior sides of cervix during the preoperative vaginal examination and leave during the surgery. The proposed cervical clamp technique successfully eased the

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