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Case Report

Contribution of Bilateral Clamping of the Infundibulopelvic Pedicles in the Control of Hemorrhage during Myomectomy. A Case Report in a Resource-Limited Setting

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Abstract

Introduction: Uterine leiomyomas are common in women, especially those with poor fertility. In resource-limited settings, women with uterine leiomyomas often consult late and usually at the symptomatic stage marked by increased per-vaginal hemorrhage. Treatment at this advanced phase of the disease is surgical, and the main complication is bleeding. The case we present illustrates an intraoperative hemorrhage control technique during myomectomy.

Case Presentation: Mrs. Z.K, 33 years old, gravida 0, was admitted in a state of shock due to heavy vaginal hemorrhage from uterine leiomyomas. Her full blood count (FBC) showed severe anemia with a hemoglobin level of 4.6 g/dl. After an emergency transfusion and a 3 weeks iron therapy, her hemoglobin level rose to 10.4 g/dl. A day prior to surgery, 500 ml of blood was taken from her for autologous transfusion at the end of the intervention. During the operation, the association of bilateral clamping of the infundibulopelvic pedicles to the cervical tourniquet made it possible to perform a myomectomy with minimal blood loss. The day 3 postoperative hemoglobin level was 9.8 g/dl.

Discussion: Surgical treatment of leiomyomas in resource-limited settings is often done at an advanced stage by laparotomy. Intraoperative hemorrhage, although often severe, can be controlled by a combination of bilateral clamping of the infundibulopelvic pedicles and the use of a cervical tourniquet.

Conclusion: Autologous transfusion and the association of infundibulopelvic pedicle clamping to the cervical tourniquet reduce bleeding during myomectomy and consequently the need for blood transfusion.

Keywords: *Myomectomy; Hemorrhage; Clamping of Infundibulopelvic Pedicles*

Synopsis

The association of infundibulopelvic pedicle clamping to the cervical tourniquet reduce bleeding during myomectomy

Introduction

Uterine leiomyomas are the most common tumors of a woman of childbearing age worldwide [1,2]. Those with a submucosal component are associated to low fertility [3]. In LIC (Low income countries), the diagnosis is often late, made when women consult for infertility

or for signs of complications such as hemorrhage or pelvic pain. After the diagnosis the treatment is often delayed either because of lack of finance, or the fear of surgery. This latter event is maintained and encouraged by charlatans who propose "miracle treatments" or prayers to the patients as a solution to their sickness [4]. All these conditions give room for the growth of fibroids to an extent of becoming a life-threatening pathology, stage at which they finally accept surgical treatment.

Given the large size of the myomas, surgical laparotomy is usually the only option. Moreover, the desire for maternity expressed by most of these women narrows our therapeutic options just to a conservative treatment (myomectomy) which carries a higher risk of bleeding in these already anemic patients

Many techniques and drugs have been experimented in an attempt to control per operative bleeding during myomectomy. Among them, medical treatment such as, but not limited to; Vasopressin, Methylergometrine, Misoprostol [2,5]. Non-medical treatments are also used, such as the insertion of a cervical tourniquet which obliterate uterine arteries [6,7].

Some authors recommend the combination of utero-ovarian arteries clamping and the cervical tourniquet. In LMIC (low and middle income countries) the large size of the myomas and sometimes their isthmic positions make it difficult to clamp the utero-ovarian arteries. However, these bulky myomas cause the uterus to distend, giving better access to the infundibulopelvic pedicles which can easily be clamped.

This case illustrates the contribution of infundibulopelvic pedicles clamping in reducing intraoperative blood loss during myomectomy.

Case Presentation

Mrs. KJ 33 years old, single, unemployed, gravida 0, consulted for severe anemia following a genital hemorrhage. The history of the disease revealed a 3 years gradual onset of meno-metrorrhagia, associated with pelvic pain due to symptomatic myomas diagnosed 2 years ago. Surgical treatment was indicated but not done for financial reasons and fear of surgery. Meanwhile, she resorted to native treatment associated to prayers, until she came for consultation in a critical stage.

The physical examination findings at admission included: a weight of 83 kg; a height of 1.66m; a blood pressure of 80/60 mmHg, a pulse of 112 pulsations/minutes. The conjunctiva were white and the abdomen distended due to the large myomatous uterus, with a symphysis-fundus distance of 25 cm. On speculum examination, the cervix was normal, with slight bleeding from the uterine cavity.

The lab results showed a hemoglobin level of 4.6 g/dl, platelet count: 330,000 cells per microliter (mcL), white blood cell count: 7800/mcL, blood group O, Rhesus positive. Ultrasound revealed a polymyomatous uterus made of 6 lumps, mostly interstitial, some of which grew towards the endometrium causing distortion of the uterine cavity.

The diagnosis of severe anemia on symptomatic myomas was made and its management consisted of a transfusion of 3 units of blood (of the four units requested). She was put on a combined tri-phasic pill which stopped the bleeding on the 3rd day. Iron therapy was instituted at a posology of 200 mg a day. This management raised her hemoglobin level to 10.4 g/dl after 3 weeks. Given that the next menses expected within a week could be fatal for her, we programmed and carried out a myomectomy, keeping 3 units of blood ready for transfusion in the blood bank. A day prior to surgery, 500 ml of blood was taken from her and save for transfusion during or at the end of surgery. Because of the large size of the uterus (symphysis-fundal height 25 cm), we opted for open myomectomy through a median para umbilical incision.

Per-operative findings included a polymyomatous uterus with 6 lumps ranging in size from 3 to 12 cm, of which the two biggest ones were FIGO Stage 2 (intramural with 50% into the uterine cavity) [8], distorting the endometrium. The tubes were macroscopically normal. At the beginning of the myomectomy, we faced significant bleeding in spite of the cervical tourniquet made of a Foley catheter number 18 inserted on the cervix uteri. It was not possible to clamp the utero-ovarian pedicles because of the size and location of myomas. Fortunately, the infundibulopelvic pedicles were well exposed and their clamping with two ring forceps (Figure 1) significantly reduced the bleeding. The myomectomy was performed through three incisions, two anterior and one posterior. There was a slight tear of the posterior wall of the endometrial mucosa, easily repaired with a 2/0 absorbable thread. All visible or palpable myomas were removed and the uterus sutured with absorbable thread N° 1. The intervention lasted 2 hours.

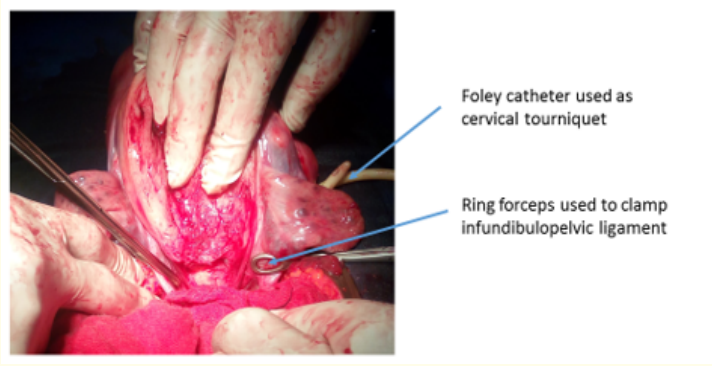

Figure 1: *Very little intraoperative bleeding after association of bilateral infundibulopelvic clamping to cervical tourniquet.*

During surgery, a combination of infundibulopelvic pedicles clamping to the uterine cervical tourniquet almost stopped the moderate-to-severe bleeding observed when the tourniquet alone was used. Blood loss was minimal (300 ml) and only the autologous blood transfusion of her unit of blood was restituted. The hemoglobin level decreased very little, from 10.4 g/dL the day before surgery to 9.8 g/dL on postoperative day 3. The patient was discharged on day 6 in a good clinical condition

Discussion

Age and parity

Our 33-year-old patient had never been pregnant. From a literature review, fibroids are mostly found in the second half of the reproductive age, between 30 and 45 years [1,2]. In addition, there is an association between infertility and leiomyomas in which the latter constitutes either a cause (by tubal obstruction or endometrial alteration) or a consequence (the risk of fibroids increasing with years) of infertility [1]. For the past two years, fertility was an issue for our patient. The macroscopically normal tubes and ovaries associated to the deformation of the endometrial cavity due to fibroids were the elements in favor of the involvement of the myoma as possible cause of her infertility, given that the semen analysis of her husband done a year ago was normal.

Women's attitude towards fibroids

In our case, the diagnosis of uterine fibroids was made a year ago during a consultation for abnormal uterine bleeding. The patient declined the proposal for surgical treatment and opted for a native treatment. She was finally admitted to the hospital in a critical stage following a life-threatening hemorrhage. This deplorable clinical situation is common in our environment where native treatments are real obstacles to the management of pathologies, especially surgical. In Nigeria [4] found that 69.0% woman believed that fibroid is a spiritual problem and many thought it requires spiritual healing. This patient with severe anemia (Hb 4.6 g/dL) could had passed away before reaching the hospital. An effort must be made on one hand to educate our women on whom the diagnosis of fibroids is made, and on the other hand to bring native treatment providers and some fanatic religious leaders to stop nourishing the patients with uncertain hope for miraculous healing of their diseases.

Clinical signs

Uterine fibroids have several clinical signs, the most common being abnormal uterine bleeding and pain. If the pain is especially troublesome, the genital hemorrhage can constitute a real life-threatening condition. The bleeding is often due to a submucosal myoma or a large interstitial myoma growing towards the mucosa and distorting the endometrium as was the case with our patient [8].

Therapeutic options

Various therapeutic means are used for the management of fibroids. For large fibroids, surgery by laparotomy is the only option, especially in resource-limited settings [7,9]. The choice of myomectomy or hysterectomy depends essentially on two factors: the future desire for maternity and the intraoperative findings [1,10]. Our patient had no child and expressed the need. Moreover, her tubes and ovaries were macroscopically normal and no myoma was located at the intramural portion of the tubes. These clinical findings re-comforted us on our decision to perform myomectomy.

The management of hemorrhage, especially the intraoperative bleeding control associating infundibulopelvic pedicles clamping to the cervical tourniquet is the main interest of this case. The ovaries are highly perfused by the ovarian arteries which arise from the aorta. Therefore, they supply enough blood to the uterus leading to persistent bleeding during myomectomy if the cervical tourniquet alone is used as a mean to control hemorrhage. Moreover, there are anastomoses between the ovarian arteries and the external (branches of the gonadic arteries) and internal (branches of the uterine arteries) tubal arteries [11]. Therefore, the cervical tourniquet by interrupting the blood circulation in the uterine arteries, will facilitate uterine perfusion by the gonadal arteries. The significant decrease in bleeding after the obliteration of the infundibulopelvic pedicles in our case settles down the precedent explanation. In literature, the most commonly cited nonmedical means remains the cervical tourniquet [6,7,11,12]. Some authors have associated the clamping of the utero-ovarian ligament [6] which is not easy to perform in cases of large myomas that distend the uterus and get into contact with the ovaries. However, this uterine distension lengthens and exposes the infundibulopelvic pedicles for an easy insertion of clamps.

For multiple large myomas, effective uterine reconstruction is only possible after removal of all fibroids. This technique can only be implemented if intraoperative hemorrhage is successfully controlled, hence the importance of associating clamping of the infundibulopelvic pedicles to the cervical tourniquet.

This case presentation has two limitations: firstly the short follow-up period to evaluate its fertility, and secondly the impossibility of performing a second-look laparoscopy to free possible adhesions.

Conclusion

The diagnosis of uterine fibroid is most often done at an advanced stage in resource-limited countries. Even when the diagnosis is made, appropriate management is implemented too late. The association of infundibulopelvic pedicles clamping to the cervical tourniquet effectively reduces intraoperative blood loss.

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