Vaginal Vault Granulations After Total Abdominal Hysterectomy Using Polyglactin for Vault Closure

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Abstract

The purpose of this study was to determine the incidence of vaginal vault granulation after total abdominal hysterectomy using polyglactin (Vicryl) for vault closure. Fifty women who underwent total abdominal hysterectomy for benign and elective conditions were included into the study. Standard surgical technique of total abdominal hysterectomy was employed except for closure of the vaginal vault performed by interrupted figure-of-eight sutures using No. 1 polyglactin. All patients were prospectively followed-up at approximately 6 weeks postoperatively and vaginal vault granulation was diagnosed as present or absent. It was found that 5 patients had vaginal vault granulation without any symptoms, giving the incidence of 10 per cent. One patient who developed vault granulation had postoperative morbidity from cuff cellulitis. The remaining 49 patients had no immediate postoperative complications.

Key word : Vault Granulation, Vault Closure, Hysterectomy

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Vaginal vault granulations are a commonly observed sequelae of total abdominal hysterectomy. Although benign, and found to regress spontaneously, they may nevertheless cause a copious discharge, and alarm the patient if they bleed[1,2]. The contributory factors for the development of granulation tissue are infection, surgical technique and type of suture material employed[1-7]. In current practice, there are two methods for dealing with the vaginal vault after total abdominal hysterectomy [1-3]. The first method is to suture around the transected circumference of the vagina with a continuous locking suture and to leave the vault itself open, having closed the peritoneum above it. The

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second method, which most gynecological surgeons prefer, is to make a complete closure of the vaginal vault especially in the noninfective cases. This is due to the rationale that complete vaginal vault closure would be associated with a higher incidence of primary healing and a lower incidence of granulation than when the vault is left open and covered only with peritoneum[1,2]. Nevertheless, we thought the type of suture materials employed might be of greater importance. In fact, it has been reported that synthetic absorbable sutures cause less granulation tissue than chromic catgut sutures [4,5]. Two common synthetic absorbable sutures available in Thailand are polyglycolic acid (Dexon) and polyglactin (Vicryl). To our knowledge there has been only one report in the literature which mentioned the incidence of granulation tissue after closed vault using polyglactin[6].

The aim of this study was to determine the incidence of vaginal vault granulation after total abdominal hysterectomy using No 1 polyglactin for vault closure.

MATERIAL AND METHOD

This prospective study was performed at the Department of Obstetrics and Gynecology, Faculty of Medicine, King Chulalongkorn Memorial Hospital, Chulalongkorn University from January 1999 to June 1999. The study group included women who underwent total abdominal hysterectomy for benign conditions. All the hysterectomies were elective in nature. Exclusion criteria were malignant neoplasm, underlying diseases which may affect wound healing, e.g. diabetes mellitus and pelvic inflammatory disease. Informed written consents were obtained in all cases. The operations were performed by consultants and third year residents under supervision of the consultants. Prophylactic antibiotics (1 gram intravenous ampicillin before the operation) were given in all cases. Standard surgical technique of total abdominal hysterectomy was employed[8]. After the uterus was removed the vaginal vault was painted with povidone-iodine soaked gauze which was then pushed down the vagina and later retrieved at the end of the operation. The vaginal vault was closed with interrupted figure-of-eight sutures using No.1 polyglactin. The pelvic peritoneum was closed in all cases. Postoperative morbidity was defined as a fever of 38.5°C on one or more occasions after the first 24 hours.

All the patients were seen at approximately 6 weeks postoperatively and asked whether they had any problems or complaints such as vaginal discharge, vaginal bleeding or pelvic pain. They were then examined with a bivalve speculum in order to determine whether there was any vault granulation. Vaginal vault granulation was diagnosed when one or more small, visible, painless, red or pink, granular to polypoid lesions were seen at the vaginal vault. Vaginal vault granulation was treated with topical silver nitrate weekly.

The data were analyzed with a computerized statistical package (SPSS program).

RESULTS

Fifty patients were included into the study. The mean [standard deviation (SD)] age, height, weight, and body mass index were 44.4 (5.2) years, 154.7 (4.7) centimeters, 50.6 (6.0) kilograms, and 21.0 (1.9) per cent, respectively. The indications for operations were myoma uteri (64%), adenomyosis (14%), endometriosis (10%), dysfunctional uterine bleeding (8%), and benign ovarian cyst (4%). The mean (SD) time of the operation, blood loss during the operation and the length of hospital stay were 86.7 (21.2) minutes, 388 (213.2) milliliters and 4.0 (0.5) days, respectively. Five patients were found to have vaginal vault granulation without any symptoms, giving the incidence of 10 per cent. All cases with vaginal vault granulation subsided after silver nitrate treatment. One patient who developed vault granulation, had postoperative morbidity from cuff cellulitis which subsided with broad spectrum intravenous antibiotics. The remaining 49 patients had no immediate postoperative complications.

DISCUSSION

Event though vaginal vault granulation is a common postoperative complication after total abdominal hysterectomy, few reports have been published which addressed the methods and suture materials used to reduce the incidence[1-7]. There are two schools of thought as to the best method for dealing with the vaginal vault after total abdominal hysterectomy[1-3], the open vault and the closed vault. Since the open vault must heal by secondary rather than primary intention this method cannot be expected to give a lower incidence of postoperative granulations[1-3]. Most agreed that closing the vault is preferable to leaving it open.

Different suture materials used have been reported to affect the incidence of postoperative vault granulation[1-7]. Plain catgut is associated with less granulation than chromic catgut[1,2]. The incidence of vault granulation using chromic catgut to close the vaginal vault was reported to be 34-53 per cent[1,2,5,7]. Despite the fact that chromic catgut has been shown to cause the highest incidence of granulation tissue, 60 per cent of the gynecologists in the UK use this material to close the vault[5]. In our institution, most gynecologists also close the vaginal vault with interrupted figure-of-eight sutures using chromic catgut. The incidence of vault granulation using this method reported by Soropala and Ingsirorat was 34 per cent[7]. Therefore, synthetic polymer suture materials are definitely preferable to chromic catgut. Fairlie and Al-Hassani[4] using the Lembert suture reported the incidence of 3 per cent when polyglycolic acid was used. However, the Lembert suture requires skill and it is more difficult to secure hemostasis[4]. Therefore, it is generally not recommended[4,7,8]. In addition, polyglycolic acid suture material may cut through the vaginal vault due to the sharpness of the material. In our study, we used polyglactin which is composed of braided filament of a copolymer of lactic and glycolic acid[9]. This suture is designed to be stronger, longer lasting, and less reactive than catgut[9]. Breakdown is by hydrolysis rather than digestion by proteolytic enzymes[9]. The result is minimal inflammatory reaction and less granulation tissue formation[9]. However, there is only one study performed by Beresford and Moher[6] who mentioned the incidence of vault granulation using polyglactin for vaginal vault closure. They compared the vault closure technique between interrupted figure-of-eight using No. 0 polyglactin with absorbable staples. The incidence of vault granulation tissue was 37 and 18 per cent, respectively[6]. In their study, they did not give prophylactic antibiotics and the indications for the operation were not mentioned. In addition, their postoperative morbidity was high (21.7%). In our study, the incidence of vault granulation was 10 per cent. The low incidence in our study may be due to the use of prophylactic antibiotics in all cases and less postoperative morbidity [only 1 in 50 (2%)]. The vagina normally harbours both non-pathogenic bacteria and occasionally pathogenic bacteria and it, therefore, seems reasonable to expect that any operation involving the vaginal mucosa would probably be followed by infection, even if only low grade virulence, which would involve healing and hence the formation of granulation tissue[1]. However, a comparative study with other suture materials such as polyglycolic acid and plain catgut is required.

In conclusion, the incidence of vaginal vault granulation after total abdominal hysterectomy using No. 1 polyglactin for vault closure was 10 per cent.

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แกรนูเลชันยอดช่องคลอดภายหลังการผ่าตัดมดลูกออกทั้งหมดผ่านทางหน้าท้องจากการเย็บปิดช่องคลอดด้วยโพลิแกล็กทิน

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วัตถุประสงค์ของการศึกษานี้เพื่อหาอุบัติการณ์ของแกรนูเลชันยอดช่องคลอดภายหลังการผ่าตัดมดลูกออกทั้งหมดผ่านทางหน้าท้อง จากการเย็บปิดช่องคลอดด้วยโพลิแกล็กทิน รายงานนี้ได้ทำการศึกษาผู้ป่วย 50 ราย ที่ได้รับการผ่าตัดมดลูกออกทั้งหมดผ่านทางหน้าท้อง โดยมีข้อบ่งชี้ทางนรีเวชวิทยา ที่ไม่ใช่มะเร็งหรือโรคติดเชื้อ เทคนิคการทำผ่าตัดเป็นเทคนิคมาตรฐาน ยกเว้นการเย็บปิดช่องคลอดจะทำการเย็บปิดโดยใช้โพลิแกล็กทินเย็บเป็นรูปเลขแปดเป็นคำ ๆ โดยได้ทำการตรวจติดตามผู้ป่วยภายหลังการผ่าตัดประมาณ 6 สัปดาห์และทำการตรวจหาว่ามีแกรนูเลชันบริเวณยอดช่องคลอดหรือไม่ จากการศึกษาพบว่ามีผู้ป่วย 5 ราย ที่พบมีแกรนูเลชันยอดช่องคลอดโดยที่ไม่มีอาการ คิดเป็นอุบัติการณ์เท่ากับร้อยละ 10 มีผู้ป่วย 1 รายที่ตรวจพบมีการอักเสบติดเชื้อของยอดช่องคลอดภายหลังการผ่าตัดและต่อมาตรวจพบมีแกรนูเลชันยอดช่องคลอด ผู้ป่วยที่เหลือ 49 รายไม่พบมีภาวะแทรกซ้อนภายหลังการผ่าตัด

คำสำคัญ : แกรนูเลชันยอดช่องคลอด, การเย็บปิดยอดช่องคลอด, การผ่าตัดมดลูก

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