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Case Report

Vaginal Cuff Dehiscence with Evisceration - A Rare Complication after Total Abdominal Hysterectomy

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Abstract

Background: *Vaginal cuff dehiscence (VCD) is an uncommon complication occurring after hysterectomy. The incidence of vaginal cuff dehiscence depends on the operation route: vaginal, abdominal, or laparoscopic approach. Among them incidence is higher following laparoscopy compared to total abdominal hysterectomy and vaginal hysterectomy. The cause of this striking difference is unknown. Factors which are probably contributing to the occurrence of VCD include opening and closure techniques of the vaginal cuff (VC), suture materials used, age, body mass index (BMI), use of medication possibly influencing the healing process, smoking, and menopausal status. Sexual intercourse seems to be the triggering event in most cases. However, it is unclear which patients are at risk for developing this serious complication*

Method: *We present the case of a woman aged 52 year, menopausal who underwent total abdominal hysterectomy for twisted ovarian cyst. Vault was closed with delayed absorbable suture. 3 months after surgery, the patient developed symptoms including per vaginal bleeding, lower abdominal pain and difficulty in micturition shortly after intercourse and were diagnosed as vaginal cuff dehiscence with evisceration.*

Result: *Patient undergoing surgical treatment may experience poor wound healing of the vaginal cuff. Resuming sexual activities before proper healing of the wound has triggered vaginal cuff dehiscence.*

Conclusion: *Optimisation of co-morbidities and improvement of general condition pre-operatively, meticulous closure of vaginal cuff and proper antibiotic coverage post-operatively remain key factor in the prevention of vaginal cuff dehiscence. Avoidance of early resumption of sexual intercourse is also a important predisposing factor.*

Key words: *Abdominal hysterectomy, Vaginal cuff dehiscence, Evisceration*

Introduction

Hysterectomy, a common major gynecologic surgery for various conditions such as uterine fibroids, endometriosis, and gynecologic cancer is performed either abdominally or vaginally. The abdominal approach offers options like open surgery, laparoscopy, or robotics, depending on surgeon's expertise. There is every chance to develop post-surgical complications. Vaginal cuff dehiscence (VCD) is one of the rare, emergency complication of hysterectomy, with potential risk of eviseration[1]. VCD refers to the partial or full thickness separation of the vaginal cuff. It is termed vaginal cuff dehiscence and evisceration (VCDE) when the intraperitoneal contents protrude through the cuff defect[2,3]. Small bowel is the most frequently eviscerated organ among others like sigmoid colon, omentum, appendix or adnexa uteri[4]. Depending on surgical method, incidence of VCD varies from approximately 0.03% to 0.30%[3,5,6]. Incidence is more higher following robotic and laparoscopy (1.14%) compared to total abdominal (0.10%) and vaginal hysterectomy (.14%)[6,7]. VCD

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may present as early as 3 days to months or years following surgery with symptoms of pelvic pain (60-100%), vaginal bleeding (30-60%), vaginal discharge (30%) or vaginal pressure[8,9,10]. VCDE is a serious post-surgical complication causing high morbidity and mortality if not diagnosed early and treated in time. Factors which are probably contributing include opening and closure techniques of the vaginal cuff (VC), suturing materials used, age, body mass index (BMI), coital act, the use of medication possibly influencing the healing process, smoking, and menopausal status and indication of hysterectomy specially malignancy[7,8,10]. Sexual intercourse seems to be the triggering event in most cases[8,12]. The use of electrosurgery, particularly monopolar and reduction of tissue margin during cuff repair may be contributing factors[13]. Due to low incidence rate and very few case reports and review articles, it is difficult to focus on accurate risk factors or make a guideline for managing VCD(E). Here we report a case of VCDE who had undergone abdominal total hysterectomy and presented with VCDE precipitated by sexual intercourse after 3 months of TAH.

Case summary

A 52-year-old perimenopausal lady without significant medical history was admitted in hospital with sudden severe lower abdominal pain and diagnosed as a large (8x6x5 cm) twisted ovarian cyst. Her BMI was 19.76 kg/m2. She undergone emergency surgery and TAH with BLSO was done. Surgery was uncomplicated. Vaginal cuff was sutured by delayed absorbable polyglyconate. It was benign ovarian cyst with hemorrhagic infarction in histopathology. Post-operative period was uneventful. During follow up she had no complain. She resumed her coital function 2 months after surgery without any difficulty. But 1 month later following 2nd time intercourse she noticed per vaginal bleeding which was small in amount, bright red in colour with discomfort in lower abdomen and difficulty in micturition. She consulted her gynaecologist. Abdominal examination revealed no abnormality. On per speculam examination intestine was found protruded through a rent of the vaginal cuff and it was found viable with no evidence of ishcaemia. No active bleeding was present.

She under-went emergency surgery transvaginally. After reposition of intestine, vaginal cuff margin was found inflamed and fragile. Margin was trimmed and repaired by delayed absorbable suture. Her post-operative period was uneventful. 1 month after surgery she was followed up and found vaginal cuff healthy.

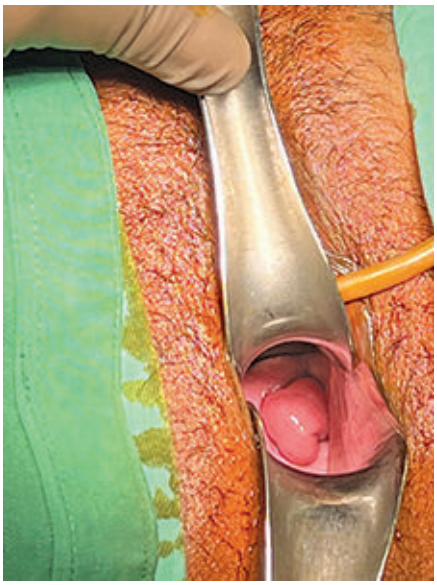

Figure 1 : *Intestine was visible through vaginal cuff*

Figure 2: *After closing of vaginal cuff*

Discussion:

VCD is potentially uncommon but severe adverse effect following hysterectomy. The incidence of VCD after TLH is high compared with abdominal and vaginal hysterectomy[18]. The laparoscopic suturing technique, knots, mode of suture, and suture materials are

suggested as possible explanations for the increased risk of VCD after laparoscopic hysterectomies[14,19,20].

Although very low incidence rate, VCD can lead to serious morbidity and mortality if it is misdiagnosed, delayed diagnosed or neglected. Early recognition and prompt intervention are essential. Evisceration is a surgical emergency, may lead to ischemic damage in the bowel wall and a need for bowel resection, mostly of the small bowel[3]. In a previous analysis of VCD, evisceration was observed in 36%[19] to 63%[21] of cases, and it is resulted in bowel resection in 29% of cases due to ischemia[21]. We presented a case of VCD with evisceration occurring 3 months after abdominal total hysterectomy and repaired transvaginally.

Our patient had no medical co morbidity. Her BMI was <20. She had no habit of smoking or taking any medication. In this report, coitus might be the precipitating event for VCD which is reported as the most common trigger[3]. In a study of case reports, the mean time to VCD was found to be 7 weeks for patients who had a total laparoscopic hysterectomy compared to 13 weeks for patients who underwent total abdominal hysterectomy ($p = 0.01$)[5]. Our patient resumed coital activity 7-8 weeks following hysterectomy without any difficulty but VCD presented 1 month later following subsequent coitus. This complication can present during the early postoperative course or may extend to years following the surgery.

Patient's abdominal hysterectomy was done due to non malignant indication by an expert gynaecologist who does TAH on regular basis. Vaginal cuff was closed by delayed absorbable suture. There was no information about suture depth or distance between suture. In TLH high-energy surgical device is used to open the vaginal cuff which cause thermal damage of the tissue. The healing process might be negatively influenced by lack of blood flow because of frequent use of the power source during cutting the circumference of the vaginal cuff (VC)[12]. Such type of high energy is not required in TAH to cut vaginal cuff. So chance of damage in tissue and vascularity is less. Use of antibacterial monofilament (polydioxanone or polyglyconate) absorbable suture facilitates vaginal stump closure in laparoscopic hysterectomy without increasing the complications, such as cuff dehiscence, especially in less experienced operators[15]. Delayed absorbable monofilament suture loses 50% of its tensile strength by 4 weeks, 100% by 2-3 months with complete mass absorption by 6-8 months[16]. When suture is absorbed before healing, chance of VCD[17] is more. Here early resumption of intercourse may weakend vaginal cuff. Possible other explanations for this weakness include the use and manner of opening the vagina, material and technique used to close the vagina, the duration of the operation, the surgeon's experience and the characteristics of the woman[7,22]. Other factors are malnutrition, hypoproteinemia and anemia, which affect collagen synthesis and proper wound healing. This has been corroborated by Fusano and collaborators, who found lower levels of iron, vitamin B12, wound diastasis and worse extension and impression of the post-surgical scar in vegan patients versus omnivores[23,24].

Conservative treatment such as haemostasis, activity restriction, prophylactic antibiotic can be an alternative when patient is medically stable with a partial VCD and without evisceration. Two case reports were found where conservative treatment was given successfully[17]. There is no standard method or guideline for optimal surgical intervention for VCD. It can be repaired transvaginally, abdominally, laparoscopically, or through a combined approach. The choice of mode of repair should depend on the patient's presentation, bowel viability, surgeon's judgement and expertise, and ability to obtain the best exposure of the dehiscence and entire abdominopelvic cavity[13]. Review of original research, case reports, and case series published in the past 30 years on VCD showed that 51% of dehiscences were repaired vaginally, 32% were repaired abdominally, 5% were allowed to heal by secondary intention, and only 2% were repaired laparoscopically[14].

The transvaginal approach is minimally invasive and leads to fewer intraoperative and postoperative complications, reduced postoperative pain, shorter hospital stay, and faster recovery. But it precludes observation of the entire abdominal cavity and irrigation of probable abscess[13]. Laparoscopic repair reduces the risk of bowel injury and complications compared to vaginal repair. It offers thorough abdominal inspection, preventing peritonitis and bowel ischemia. Early laparoscopic intervention prevents recurrence and ensures good vaginal length. Patient satisfaction is higher with laparoscopic repair. But it needs good surgical skill and expertise.

To reduce the incidence of VCD, it is recommended to avoid early intercourse with deep penetration for at

least 12 weeks postoperatively. Though Laparoscopy is a feasible treatment option for the repair of VCD, method of surgery will be chosen by surgeon. Before choosing method surgeon should give priority to better healing, visualization, and risk of bowel injury and morbidity associated with repeat laparotomy.

Conclusion:

The incidence of VCD is higher after TLH compared to others. Early detection and correction of risk factors and prompt intervention may reduce incidence. More studies are needed to investigate possible causal factors and appropriate method of vaginal closure to prevent dehiscence.

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