

Menstruating Scar: Uterocutaneous Fistula – Uncommon Complication of Open Abdominal Myomectomy in Nigerian Women: Case Series of Medically Managed Cases

Chidinma Magnus NWOGU¹, Ayodeji Kayode ADEFEMI^{2*}, Muisi Alli Adenekan³, Aloy Okechukwu UGWU⁴, Ayodeji A OLUWOLE⁵

¹Kingswill Specialist Hospital, Lagos, Nigeria

²Department of Obstetrics and Gynaecology, Lagos state University Teaching Hospital, Ikeja

³Department of Obstetrics and Gynaecology, Lagos Island Maternity, Lagos Nigeria

⁴Department of Obstetrics and Gynaecology, 68 Nigerian Army Reference Hospital, Yaba, Lagos, Nigeria

⁵Department of Obstetrics and Gynaecology, College of Medicine, University of Lagos, Nigeria

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*Corresponding author: Ayodeji Kayode ADEFEMI

Department of Obstetrics and Gynaecology, Lagos state University Teaching Hospital, Ikeja

Abstract

Utero-cutaneous fistula (UCF) is a rare complication of pelvic surgeries in women. It occurs when there is a fistulous connection between the uterine cavity and anterior abdominal wall. It has been reported following open abdominal myomectomy, surgeries for endometriosis, chronic and granulomatous pelvic infection, poorly performed caesarean section, gynaecological malignancies, complication of the management of placenta accreta spectrum, and foreign body insertion for the treatment of infertility. We present three cases of Uterocutaneous fistulas post open abdominal myomectomies managed medically using high dose intramuscular depo-medroxy progesterone acetate (DMPA).

Keywords: Uterocutaneous fistula, myomectomy, medical management, depo-medroxy progesterone acetate.

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INTRODUCTION

Conventionally, a fistula is generally said to occur when there is an abnormal communication between two epithelial surfaces (in this case uterine cavity and skin) [1,2]. Utero-cutaneous fistula (UCF) is a rare complication that occurs when there is an abnormal tract between the uterine cavity and the skin [1,2]. Although a rare clinical entity, most of the reported cases occurred following surgical injuries especially complicated open abdominal myomectomy and caesarean section [2].

It has also been reported as a rare complication of open abdominal myomectomies compared to other pelvic surgeries [3,4]. Other pelvic surgeries documented with the occurrence of UCF include; complicated caesarean section such as one with classical caesarean section [1,2], presence of red degeneration of intramural fibroids and placement of B-lynch sutures have been documented [3], use of drains, radiation

therapy or traumas to the uterine wall during curettage, criminal abortion, and incomplete closure of incisions [1,3]. History of multiple uterine surgeries appears as the most consistent factor [1-4].

The pathophysiology stems from the formation of dense adhesions between the uterus and the abdominal wall which over time becomes thinner, less vascularised especially after multiple surgeries alongside superimposed wound infection and secondary wound closure [2,3]. Direct contact of the uterus with the thin abdominal wall then becomes more likely. Secondary infection could erode through the uterine scar and the endometrial cavity creating an Uterocutaneous fistula especially in the background of poor surgical skills, anaemia and poor postoperative wound care [3, 5].

Case 1

She was a 36-year-old nulliparous lady who had open abdominal myomectomy for symptomatic multiple

uterine fibroids 6 years prior to presentation. Her post op was complicated by surgical site infection and intrabdominal abscess necessitating a repeat exploratory laparotomy. Her menses returned four weeks post-surgery with hypomenorrhoea. At about the same time she noticed cyclical bloody discharge from dimples along the midline scar. She was subsequently referred to our facility. Physical examination done at presentation revealed a midline scar with multiple dimples and tenderness along the lower half of the scar. Pelvic ultrasound scan showed a uterus with a fundal defect and anterior surface adhered to the anterior abdominal wall with probe tenderness along the lower half of the scar. Her Hysterosalpingogram done at presentation revealed a poor filling of the uterine cavity due to poor retention

of contrast within the uterine cavity with contrast spill from the scar site during procedure.

An embryo transfer catheter with a stillete guided by a trans abdominal scan through the cervix was seen traversing the uterus at the fundal region aborting close to the peritoneal surface of the anterior abdominal wall. Methylene-blue dye instilled with the catheter still in situ was seen tracking out of the scar region at the region of one of the dimples. She was administered intramuscular depo-medroxy progesterone acetate (DMPA) 300mg monthly for 3 months for induction of amenorrhoea (as an alternative to the very expensive GnRH agonist) after which patient resumed menses 3 months after the last dose without the cyclical discharge from the scar for the next 6 cycles of follow up.



Image 1: Abdominal incision scar site showing the fistulous site as a dimple along the scar.

Case 2

She was a 42-year-old nulliparous single lady who had open abdominal myomectomy on account of symptomatic multiple uterine fibroids. Her menses commenced about 12 hours before surgery, however the surgeon continued with the surgery as scheduled. Myometrial cavities were closed with chromic 2 sutures. She was discharged on third day post-surgery. However, presented to our facility two weeks post myomectomy on self-referral on account of lower abdominal pain, fever and copious sero-purulent discharge along the Pfannenstiel incision site a month after surgery. Her full blood count at presentation showed WBC of 14,000 and PCV of 22%. An ultrasound scan revealed an abscess collection within the pelvis in the region between the bladder and the uterus. She had parenteral antibiotics and blood transfusion for anaemia. Following unsuccessful attempt at ultrasound guided abscess drainage, she subsequently had a repeat laparotomy and drainage of pelvic abscess. Her post op recovery was uneventful. She was discharged home with a PCV of 31.6%.

However, she represented one month after the second surgery with copious purulent discharge from the operation site at the onset of her menses. A transvaginal ultrasound scan showed an isthmocele-like defect on the

lower anterior uterine segment. MRI could not be done as she had pellets lodged within her gluteal area from gun shots she had in the past.

Abdominopelvic-CT scan was done which showed a bulky uterus, two foci of necrotic areas with an enhancing wall at the anterosuperior aspect of the uterus which is continuous into the rectus muscles and subcutaneous tissue. The involve rectus muscle shows focal myositis evidenced by fat stranding and relatively enlarged muscle bulk. There is loss of fat planes between the uterus and the anterior abdominal wall. Inflammatory fat strandings are noted around the uterus and subcutaneous tissues. Features were suggestive of an Uterocutaneous fistula. Cervical examination and probing revealed a stenosed cervical os which was probed and dilated using an uterine sound under pelvic ultrasound guidance. A scar obstruction was encountered just beyond the internal os before the isthmocele which was broken down to assess the upper uterine cavity with the uterine sound. She had conservative management by induction of amenorrhoea using intramuscular depo medroxyprogesterone acetate (DMPA) 150mg given as a stat dose and repeated a month later. She was amenorrhoeic afterwards, the discharge stopped and the

wound site closed within a week and menses resumed 7 months after the second dose of DMPA administration.



Image 2: Pictures of purulent effluent from lateral edge of skin incision

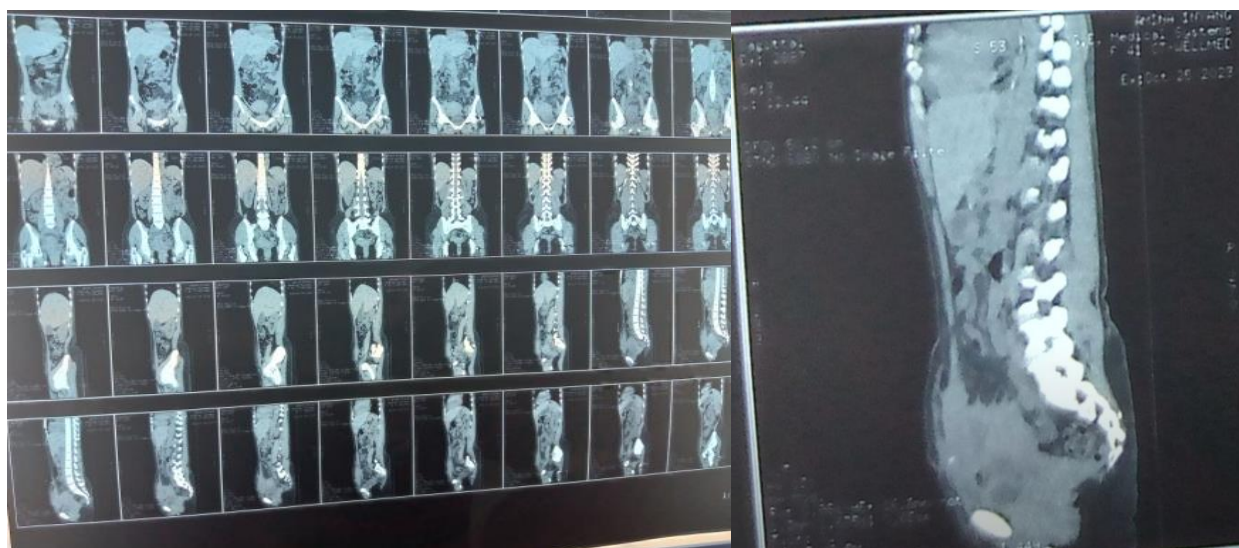


Image 3 & 4: CT scan images of post myomectomy Uterocutaneous fistula

Case 3

She was a 38-year-old nulliparous lady who had open abdominal myomectomy on account of symptomatic uterine fibroids (menorrhagia and primary infertility). She represented to the same facility 3 weeks post-surgery on account of poor wound healing. The lower half of the midline incision failed to heal. At the time of presentation, she was also having purulent discharge from the lower part of the wound and from the vagina. An MRI done revealed a peripheral contrast enhancing linear tract traversing the lower anterior abdominal wall coursing superiorly and inseparable from the adjacent anterior uterine wall suggestive of an abscess tract. Contrast was also seen smearing the surrounding anterior abdominal wall tissues. She had a repeat laparotomy during which the uterus was found to

be adhered to the anterior abdominal wall with a fistulous tract between the anterior myometrial wall abscess cavity connected to the skin wound containing pus and slough. The entire intramyometrial abscess was drained and freshened until healthy well vascularised uterine tissues was seen. Uterus was then repaired and abdomen closed in layers. Subsequently her menses commenced with normal flow from the vagina and surgical site following which she was referred to our hospital.

In our facility, she was administered intramuscular depo-medroxy progesterone acetate (DMPA) 300mg monthly for 3 doses for induction of amenorrhoea. Her menses resumed after 4 months from the last dose of DMPA during which she had no further discharge from the surgical scar.



Image 5: Abdominopelvic MRI of post myomectomy Uterocutaneous fistula

DISCUSSION

The presentation of Uterocutaneous fistula can vary from months to years after the last surgery [1,5-7]. Bloody discharge or leakage from the incision scar is strongly suggestive of an uterocutaneous fistula [1-4], cutaneous endometriosis being a very close differential [3]. The discharge could be cyclical especially in a premenopausal woman.

In case 1, presentation was months after surgery and the cyclical fistulous effluent was bloodier and more menstrual like making cutaneous endometriosis a differential. Diagnosis was made by observing menstrual bleeding through the skin, probing, HSG finding and methylene blue dye instillation.

Case 2 and 3 occurred within a few weeks after surgery and fistulous effluent was more purulent actively draining with patients looking ill. These are suggestive of infective process during the post operative period. Active drainage of discharge makes them unsuitable for dye instillation. Background cervical stenosis or iatrogenic cervical stenosis by stitches during myomectomy may possibly hinder early per vaginal drainage of blood post surgery, allowing tension build up

from haematoma within the uterus and a favourable setting for infective process.

Common denominators in all three cases include presence of huge multiple fibroids prior to open myomectomy, use of rapidly absorbable chromic-2 suture for myometrial closure, post operative anaemia and sepsis, myomectomy done by non-gynaecologists.

There is no evidence-based standard of care regarding choice of investigations and treatment modality due to the rarity of uterocutaneous fistula [1,3,8].

Investigative modalities are largely radiological. Ultrasonography, fistulogram, or methylene blue test are basis investigative modalities [1-4]. Magnetic resonance imaging (MRI) with contrast and computed tomography (CT) with an intravenous contrast and sagittal reconstructions are diagnostic option where available and where there are doubts [1-3].

Fistulography with the contrast material through the skin opening provides direct means of visualizing the cutaneous fistula and the connection to the uterus [1-3]. Injection of methylene blue injection via

the cervix while observing for outflow through the skin dimples or hysterosalpingography (HSG) can be helpful especially if the skin opening is small to allow for contrast retention [1,9]. Lateral view of the HSG may reveal irregular extension of contrast into the soft tissue in the lower anterior abdominal wall [1,3]. Direct visualization of fistulous opening into the uterus can be seen on hysteroscopy [4,6].

Surgical excision of fistula tract has remained the traditional treatment; this can be facilitated by the injection of methylene blue through the cutaneous opening to delineate the fistula tract for excision, [1] and alternatively retrograde dye injection from the cervix can also facilitate surgery [9].

Surgery ranges from conservative fistula tract excision [1,10,11], to extensive surgeries such as subtotal hysterectomy [12] and a total abdominal hysterectomy where fertility preservation is not needed [7,9,13].

Medical treatment is by the induction of amenorrhoea which prevents continuous drainage from uterine secretions into the tract. Gonadotropin-releasing hormone (GnRH) agonist treatment to suppress menstruation and induce atrophic changes in the epithelium and assists in the spontaneous closure of the fistula has been used for this purpose in the past [14,15]. Larger size fistula requires surgical approach [1].

Medical treatment is limited by long treatment duration and possibility of treatment failure requiring surgical treatment. Cost of GnRH agonist necessitated the use of intramuscular depo-medroxy progesterone acetate for amenorrhoea induction in the cases which was enough to facilitate spontaneous closure or as adjunct to surgical treatment [13-15].

More recently has been combined medical and surgical treatment for the reduction in the risk of hysterectomy and possibly facilitate minimally invasive surgery (laparoscopy) for tract excision [6]. Good surgical skills, anaemia prevention and optimization pre and post operatively along with appropriate postoperative care aimed at preventing post operative wound infection and breakdown will reduce the likelihood of surgery-induced uterocutaneous fistula. It is also important to schedule myomectomies during the follicular phase when the uterus is less vascular to avoid iatrogenic endometriosis and formation of uterocutaneous fistula from poor wound healing.

CONCLUSION

Uterocutaneous fistula is rare, it should be considered after uterine surgeries and injuries especially in the presence of multiple surgeries and infection. Signs of inflammation at incision sites should not be ignored especially where there is chronic pelvic pain or uterine

abscess. UCF can be managed using medical and surgical treatment.

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