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Management of Uterocutaneous Fistula: A Stepwise Approach

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Abstract

A fistula is an abnormal tract that connects two epithelial surfaces and occurs as a result of trauma, surgery, or infections. Most uterine fistulae are between the uterus and the bladder (utero-vesical) or between the uterus and the bowel (utero-colonic) due to postoperative injuries or infectious conditions. Utero-cutaneous fistula (communication between the uterus and skin) is a rare condition, accounting for only a few reports in the existing literature. We describe a patient with fistula following a caesarean section who did not respond to medical or surgical (secondary suturing) treatment. She underwent fistulectomy with repair of the uterus and abdominal wall. The procedure led to a successful outcome.

Keywords: Utero-cutaneous fistula • Lower segment caesarean section • Fistulography

Introduction

A fistula is an abnormal tract that communicates between two epithelial surfaces. Utero-cutaneous fistula is a rare clinical entity that occurs due to the presence of an abnormal tract communicating the uterine cavity and the skin. The exact incidence is not well known due to the rarity of this condition. Causes of utero-cutaneous fistulas include inadvertent injuries during pelvic or abdominal surgeries, endometriosis, intrauterine devices, chronic infection, malignancies with local invasion to the adjacent organs, prolonged use of abdominal drains, radiation injury, trauma, and the incomplete closure of wounds, particularly the uterine wall [1,2]. Patients typically present with cyclical pain and bleeding from an abnormal opening in a previous caesarean section scar [3].

Case Report

A 30-year-old, Para3, Living 3, presented with complaints of serous to purulent discharge from the LSCS (lower segment cesarean section) scar site for the past four months. She had one normal delivery, followed by two caesarean sections. The last caesarean section was done in November 2021 elsewhere.

One week after her second lower segment cesarean section she noticed a seropurulent discharge from the scar site, for which she consulted the physician and was treated symptomatically with antibiotics. Following this, there was a temporary relief, but she noticed bloody discharge during her menstrual cycles from the scar site. She underwent secondary suturing of the LSCS (lower segment cesarean section) scar site in January 2022 with a second course of antibiotics. The treatment was unsuccessful, and she noticed serous discharge repeatedly from the same site, which was bloody during her menstrual cycle. She had undergone a CT (computed tomography) fistulogram (Figure 1) and MRI (magnetic resonance imaging) in her hometown and was diagnosed as utero-cutaneous fistula.

Clinical Findings

The patient's general condition was good. She had a Pfannensteil incision scar of 15 cm with signs of inflammation, redness, induration, and seropurulent discharge in left half of incision site. A wound swab was taken and sent for aerobic culture and sensitivity testing and for gene expert to rule out *Mycobacterium tuberculosis complex* infection. The report showed heavy growth of *Enterococcus faecalis* and scanty growth of coagulase-negative *Staphylococci*, and Gene expert showed a negative report for the *Mycobacterium tuberculosis complex* infection. Therefore, the patient was started on antibiotics according to the sensitivity report. Routine blood test results were found to be normal. The PAP test (Papanicolaou test) was done, and it was found negative for intraepithelial lesions. Urine culture and sensitivity testing revealed *Klebsiella pneumoniae* growth, which was treated. She was posted for fistulectomy under spinal anesthesia on 23/02/2022.

Methylene blue dye was injected into the fistula opening, and the tract was followed (Figure 2). The patient had four fistula tracts: two up to the rectus sheath and two up to the uterus, one of which was S-shaped (Figure 3). Fistulous tracts were dissected from the surrounding adhesions Necrotic tissues were excised, and fistulectomy was done (Figure 4). The uterus was sutured in layers with intermittent sutures using polyglycolic acid suture (No. 1-0). Interceed was placed over the suture line. Intra-abdominal drain was kept. The rectus sheath and abdominal muscle was closed with intermittent sutures by using polyglycolic material (No.1 Vycryl) and reinforced with the same by a plastic surgeon. A subcutaneous drain was placed. The skin was closed with mattress sutures using non-absorbable suture, Ethylon 2-0 (Figure 5).

Histopathology report and outcome

Histopathology reported a granulomatous inflammatory process. Dermis and subcutis showed numerous tracts lined by granulation tissue and dense chronic inflammatory infiltrate composed of epithelioid histocytes, Langhans cells, and foreign body type of giant cells and lymphocytes (Figures 6 and 7). The Ziehl-Neelsen (ZN) stain for acid-fast bacilli (AFB) was negative. The

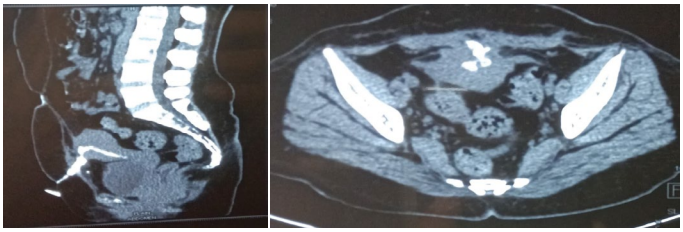

Figure 1. CT fistulogram showing fistulous tract extending from skin to uterine cavity.

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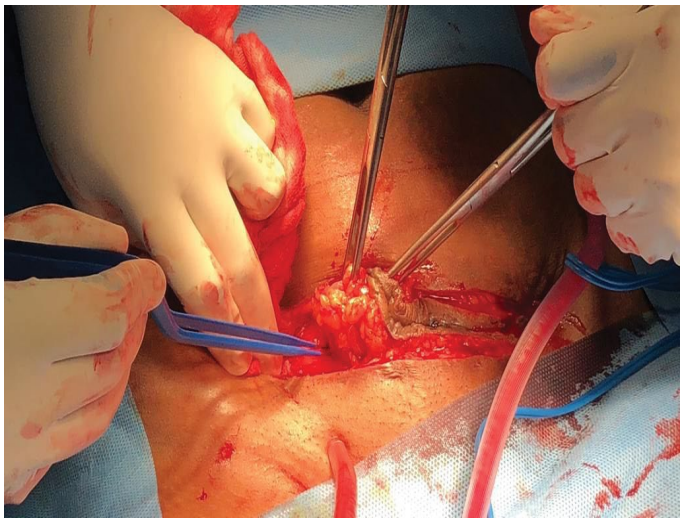

Figure 2. Fistulous tract beneath the skin stained with methylene blue.

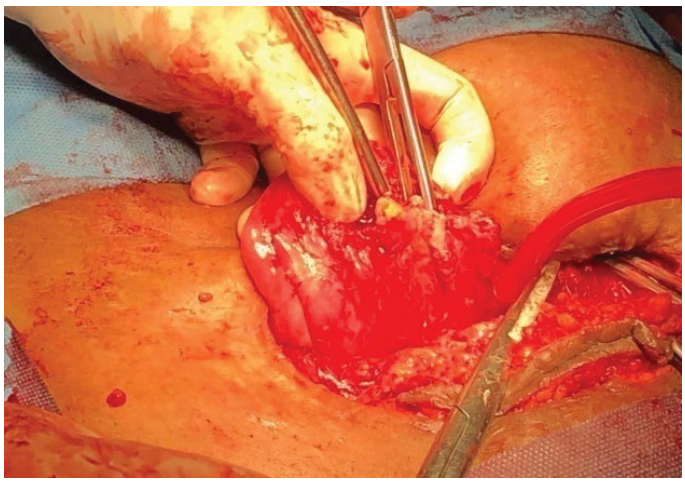

Figure 3. Uterus with communicating fistula to the skin.

Figure 4. Fistulous tract excised.

postoperative recovery was uneventful, and the patient was discharged after two weeks following suture removal. No recurrence was reported thereafter.

Discussion

The number of reported cases of utero-cutaneous fistula is small.

Figure 5. Skin closure, post procedure.

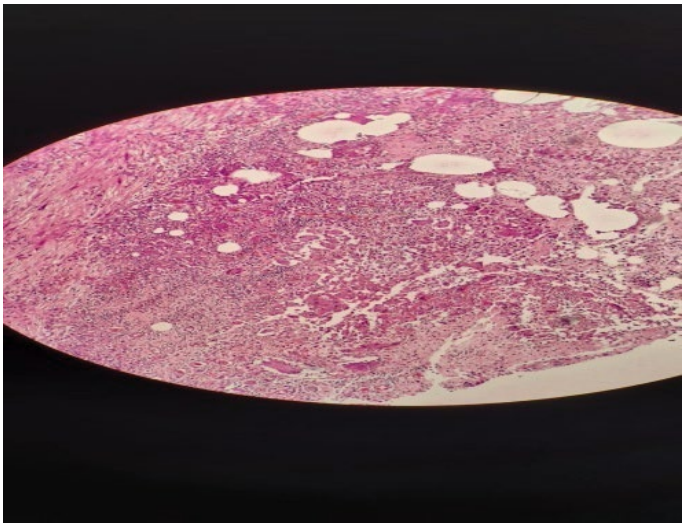

Figure 6. Fistulous tract lined by granulation tissue and chronic inflammatory infiltrates of histocytes,lympho-cytes, giant cells.

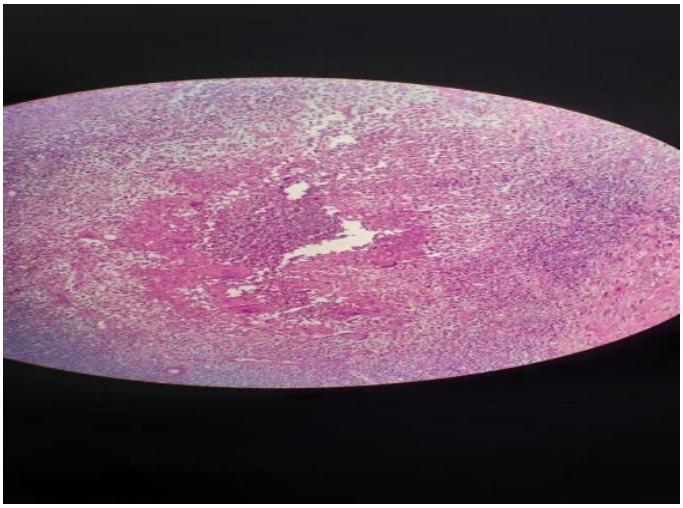

Figure 7. Fistulous tract lined by granulation tissue and chronic inflammatory infiltrates of histocytes, lympho-cytes, giant cells.

Inadequate closure of the caesarean section wound is the most common cause of utero-cutaneous fistula [4,5]. The exact pathophysiology of its formation is not well understood. The three major contributing factors are postoperative infection, poor suture technique, and the use of non-absorbable

suture materials [3,6]. Fistulas are also caused by endometriosis without a history of surgery or intervention [7]. The time of presentation after surgery is not well defined, and each patient has a variable presentation. The diagnosis is clinical when a patient presents with cyclical bleeding during menstruation from a previous lower abdominal wound or chronic purulent discharge of pus or serum-sanguineous fluid from the incision site [3].

Imaging studies are helpful in detecting the abnormal tract between the uterine cavity and the skin. An MRI (magnetic resonance imaging) or CT (computed tomography) scan with a contrast agent is helpful to define the anatomical planes in the pelvis. Fistulography or hysterosalpingography can be done to demonstrate the abnormal connection between the skin and the uterine cavity. Hysteroscopy may help to visualize the fistulous tract opening from the uterine cavity [8]. Surgery was considered the only option for treatment, with procedures ranging from fistula tract excision to hysterectomy [9]. Seyhan A, et al. [10] reported a patient treated with gonadotropin-releasing hormone agonist (GnRH) alone: the GnRH agonist induces atrophic changes in the epithelium, thereby reducing discharge from the fistula and assisting in the subsequent closure of the fistula. A larger fistula opening, on the other hand, necessitates surgical intervention.

After establishing the diagnosis of utero-cutaneous fistula in a patient, surgery involving fistulectomy and repair of the uterine wall and abdominal wall may be needed for a satisfactory outcome.

Conclusion

Good uterine surgery technique and proper postoperative care can prevent the formation of utero-cutaneous fistula. Any presentation of chronic pelvic pain, non-healing wound following uterine surgery needs examination of the fistulous tract. Prompt preoperative evaluation and surgery can bring good results.

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