



# A Salpingo-Cutaneous Fistula in a Patient after Peripartum Hysterectomy

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## Authors' contributions

This work was carried out in collaboration between both authors. Author EDG designed the study and wrote the protocol. Author AKĆ wrote the first draft of the manuscript and managed the literature searches. Both authors did the data collection and management of patients. Both authors read and approved the final manuscript.

## Article Information

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## Case Report

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## ABSTRACT

**Aims:** Salpingo-cutaneous fistula is an extremely rare clinical condition that can be seen after pelvic or uterine surgery.

**Presentation of Case:** A case of an salpingo-cutaneous fistula that developed in a nulliparous woman after peripartum hysterectomy is described. The fistula tract was depicted on computed tomography, and to verify the diagnosis nuclear magnetic resonance was made. At laparotomy fistula tract was completely excised along with the enclosing ovary. Postoperative recovery and follow-up were uneventful.

**Discussion:** Possible mechanisms of development of such a rare condition, and magnetic resonance imagining are discussed.

**Conclusion:** The MRI has the advantage over CT in the diagnosis of unusual pelvic illness.

**Keywords:** Salpingo-cutaneous fistula; magnetic resonance; peripartum hysterectomy.

## 1. INTRODUCTION

Fistula is the channel absent in normal conditions, connecting the two organs with a

cavity together (e.g. vesico-uterine fistula), or connecting an organ with the skin or mucous membrane (e.g. vesico-vaginal fistula). Such anomalies can be congenital - primary or

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secondary fistula - associated diseases or iatrogenic as a result of medical procedures.

Gynaecologists are familiar with vesicovaginal, ureterovaginal and rectovaginal fistulae. Fistula between the reproductive organs and the skin is a rare complications of gynecologic surgery. Some of them are associated with chronic infections like Crohn's disease' while others may be due to surgical complications [1,2,3,4].

Fistulous communications of fallopian tube with other reproductive organs have been reported [2,4,5]. Authors illustrate a case of salpingo-cutaneous fistula due to the exceptional rarity of this complication, supported by clear documentation on preoperative imaging, postoperative observation and surgical technique.

### **1.1 Aim of Study**

Authors would like to present a case of salpingo-cutaneous fistula as a complication after peripartum hysterectomy without ovaries with emphasis on necessary steps of diagnosis and treatment in these cases and several months of control and monitoring of the treatment.

### **1.2 Presentation of Case**

A 30-year-old patient was admitted to the hospital for tumor in left groin and periodical pain from the same side. It was found, based on an interview, that in February 2007 the patient born a male child 2470/56 at 37 weeks gestation. Delivery was complicated by rupture of the perineum 2 / 3 degree and uterine atony with hypovolemic shock.

Peripartum hysterectomy without ovaries was made. The transfusion of 11 units erythrocytes concentrate, 4 units fresh frozen plasma, 1000 ml 20% albumin, 275 ml concentrate of thrombocytes and 7.2 ml Novo-Seven was done. Due to continuous bleeding from the surgical drains and the severity of patients state with symptoms of hypovolemic shock, and bleeding disorder patient was transferred on the first postpartum day to the hematology center, suspecting congenital defect of the coagulation system. After another substitution of erythrocyte concentrate, plasma and recombinant factor VII, relaparotomy was performed in the second postpartum day, noting the presence of large quantities of blood clots and fluid in the peritoneal cavity and multipoint bleeding from the site of deleted uterus. After completing the

shortage of red blood cells, plasma and calcium the gradual improvement of the patient was achieved. Coagulation tests revealed no isolated deficiencies of clotting factors.

The postoperative abdominal ultrasound revealed: heterogeneous, hypoechogenic area with an irregular shape was visible above the bladder, the site of the deleted uretus, probably corresponding to the hematoma in various stages of organization 70x80 mm. Abdominal ultrasound repeated after one month showed: hypoechogenic and heterogeneous change with dimensions of 33x25 mm in projection of the genital tract.

The patient was admitted to the gynecologist five months after delivery and laparotomy with symptoms of tumor in the left groin, painful from time to time. There were periods without these symptoms, ranging up to 2-3 weeks. In a clinical study there were no changes in the pelvis. The ultrasound revealed abdominal fluid reservoir with dimensions 17 x 6 mm in the place of scars of drain, on the left side. The ovaries were regular on both sides. In view of the very mild symptoms, treatment was abandoned and decided to further observation.

The patient was admitted again to the doctor after six months, not only because of the persistent current symptoms, but also from the periodic increasing of tumor. The abdominal ultrasound described: irregular fluid reservoir with septum penetrating to the muscles in the direction of the peritoneum, in the left iliac fossa, - the part above the muscle sized 27 x 7-8 mm, the greater part closer to the intestine 40 x 13 mm - reached to iliac artery. The abdominal CT scan revealed: fluid change 27 x 30 mm in the projection of the left adnexes. Visible change of heterogeneous density, with contrast enhance area was around the bottom of the left hip, within the abdominal muscles.

Towards the stagnation in the diagnosis and ongoing pain magnetic resonance imaging was underwent. It was two years after laparotomy. The pelvic MRI image revealed irregular fluid reservoir laying under the skin in the left lower abdomen and groin, with dimensions of 30 x 25 mm and a thickness of 10 mm. Lesion was connected with the tissue band running through the oblique muscles and formed a narrow canal located under the muscle, connected with second pelvic tubular shaped reservoir with dimensions 5 x 5 x 17 x 12 mm and reaching into

the left ovary. Magnetic resonance imaging suggested salpingo-cutaneous fistula (Fig. 1).

Primary patient has been treated with: tramadol per rectum, metronidazol and rehabilitation: DKF and laser on tumor.

On admission, no changes in physical examination except tumor 3-4 cm in diameter, well demarcated from adjacent tissue and pain with palpation in the left groin, were observed. The gynecological examination showed: perineum and vulva proper construction, multiparous, normal vagina, adnexes unchanged on both sides in palpation.

The transvaginal ultrasonography made on admission revealed: normal echogenicity of the vagina, adnexes on both sides without pathological change, no fluid in Douglas cavity. Abdominal USG examination revealed multicystic tumor of 2-3 cm wide and about 6 cm long in left abdomen, in place after the drain. No other pathology in the other studies was found.

The patient was qualified for surgical treatment - removal of salpingo-cutaneous fistula. Upon

entering the peritoneal cavity, there were dense adhesions noted between the pelvic organs and the peritoneal surface. After adhesiolysis, canal of the fistula between abdominal recti muscle, subcutaneous tissue, salpingx and left ovary was removed.

### 1.3 Surgical Technique

The patient was prepared as for surgery of the gastrointestinal tract. After removing the old scar the abdominal cavity was opened. Within the abdominal recti muscle, on the left side the beginning of the fistula drained into the peritoneal cavity was found (Fig. 2). Scar tissue and adhesions between fallopian tube and left ovarian residue with the peritoneum, bowel and part of the greater omentum were reached (Fig. 3). Successively the left oviduct and ovary were unleashing from the adhesions on the length of about 8 cm. Oviduct was dissected and cut off from the ovary (Fig. 4), and then a fistulectomy and resection of the involved salpingeal tissue were performed (Fig. 5).

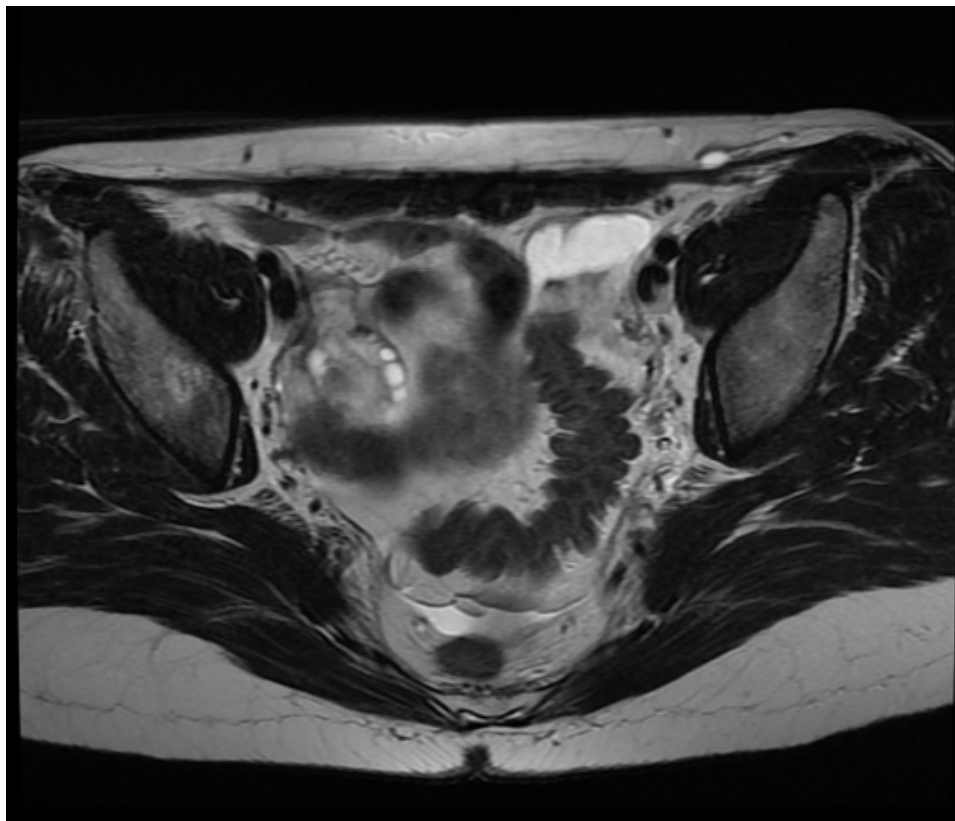
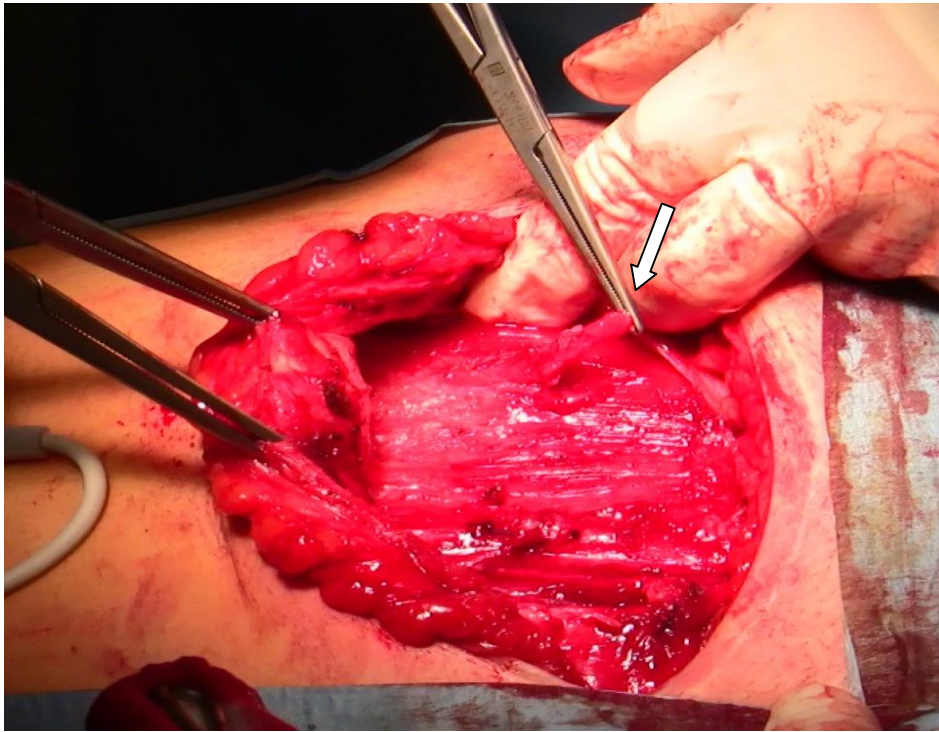


Fig. 1. A salpingo-cutaneous fistula in MRI image

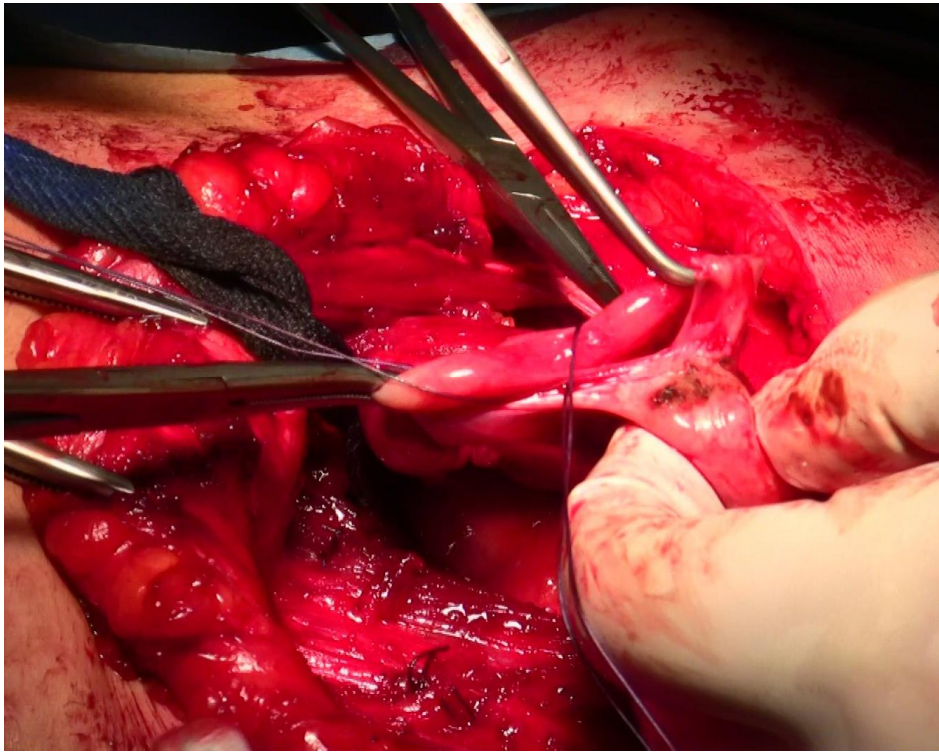


**Fig. 2. The upper part of the channel of salpingo- cutaneous fistula, located above the rectus muscle of abdomen**

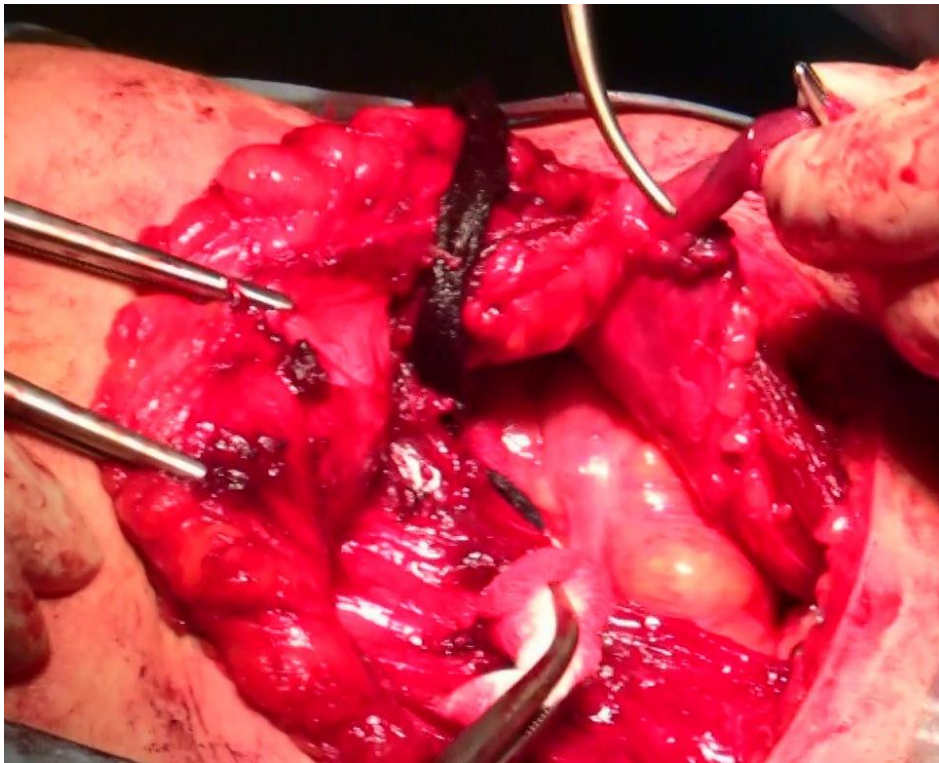


**Fig. 3. Intraperitoneal part of salpingo-cutaneous fistula**

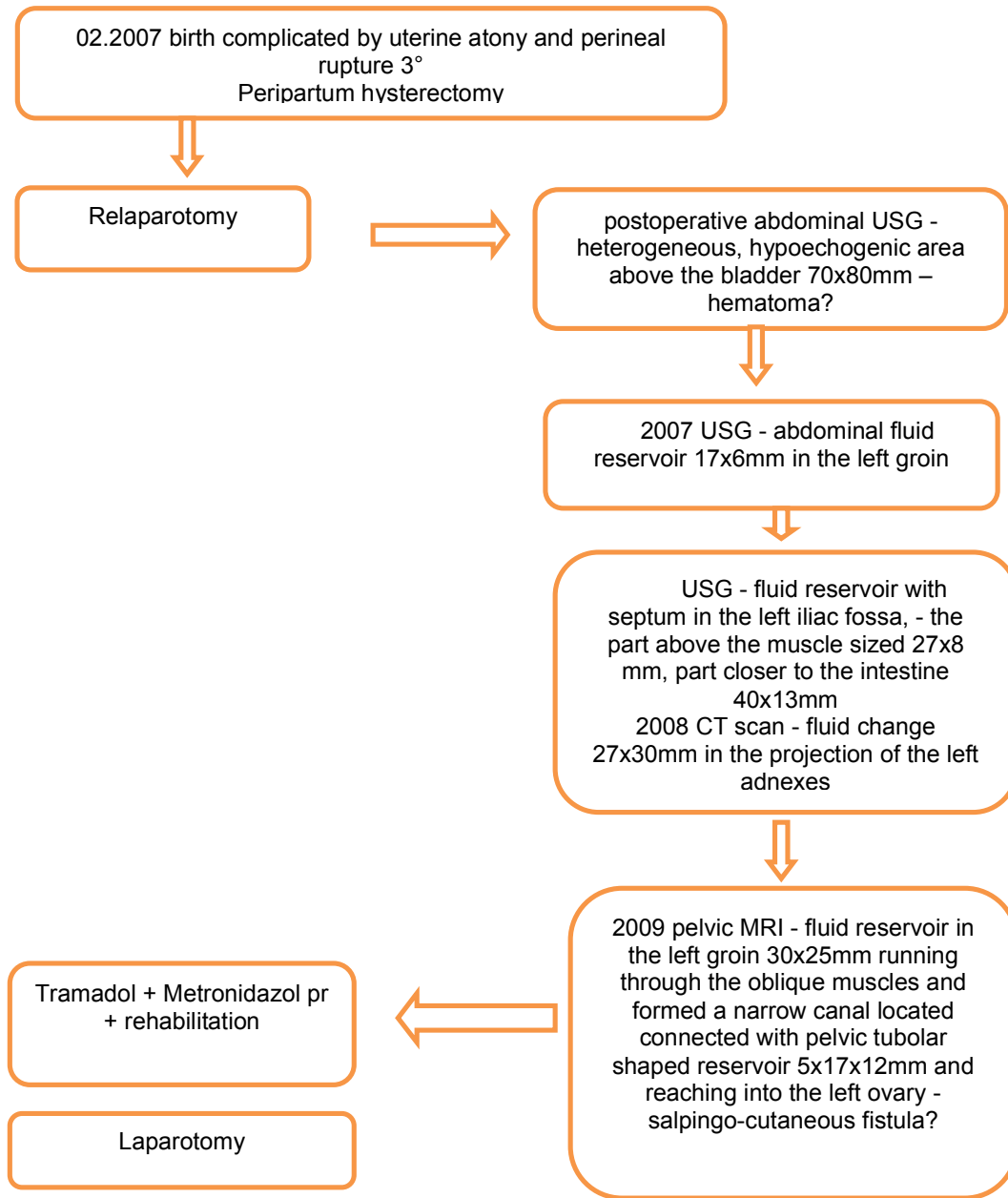




**Fig. 4. Preparation left salpinx from ovary**



**Fig. 5. Part of fistula's canal passes through the rectus muscle of abdomen**



**Fig. 6. Diagram of patient management**

Histopathologic examination confirmed the intraoperative diagnosis. No changes characteristic of specific infections, or neoplasm was found.

The postoperative course was uneventful and her abdominal pain was reduced. She was discharged on postoperative day 5 and has had regular follow-up visits to the outpatient clinic for 1 year with no evidence of new or recurrent complications (Fig. 6 above).

**2. DISCUSSION**

The removal of the uterus during pregnancy, childbirth and puerperium is a rare performed obstetric surgery. The frequency of obstetric hysterectomy is from 0.2 per 1000 births to more than 3 / 1000 deliveries according to data from various centers. These are often life-saving treatments, technically very difficult, with a high rate of serious complications, especially in cases of emergency. According to the literature the

most common perinatal complications of hysterectomy are massive intraoperative hemorrhage, coagulation disorders, and urinary tract injuries - most commonly the bladder.

Fistula can occur secondary to malignant tumors, pelvic surgery and pelvic radiation or as an effect of several specified causes. Fistulas may occur in the ureter, bladder, urethra and lead to the vagina.

There are many reported cases of uterine-cutaneous fistula in the literature. Most of them are a complication of classic Cesarean section [1]. It rarely comes to a salpingo-cutaneous fistula as a result of caesarean section and perinatal hysterectomy. In the literature, such cases are rarely reported [4,6,7,8]. Most tubal fistulas arise as a result of inflammation of the fallopian tube, bowel inflammation or as a complication of gynecological surgery - cesarean section, salpingectomy or myomectomy. Obiechina described salpingo-cutaneous fistula as a consequence of induced septic abortion additionally complicated by pelvic abscess [6]. Palnaes-Hansen and Seng-Ah described fistula as a consequence of Crohn's disease [4,7]. Yadav described the utero-cutaneous fistula as a complication of laparotomy performed because of paraovarian cyst and intraperitoneal adhesions. In most cases, an additional complicating factor is infection [2,4,5,9].

In our case the fistula was a complication after peripartum hysterectomy without adnexes because of its atony. There was no infection of the fistula in the postoperative period. Probably the fistula was formed during removal of the surgical drains when the fallopian tube has been moved under the skin. The main symptom presented by the patient was a painful tumor in her left groin. Periodic change in tumor volume was associated with a partial emptying to the peritoneal cavity. Ultrasound and computer tomography (CT) did not allow a definitive diagnosis. Hence the difficulties and protracted diagnostic procedures.

The rapid development in imaging techniques allows significantly improve noninvasive diagnosis of gynecological patient today. The most important method is still magnetic resonance imaging. MRI tomography quickly became a universal diagnostic tool and has been used in all branches of medicine. For example endometriosis is a disease very difficult to

diagnose without the use of invasive methods. For this reason, great expectations are associated with dynamic contrast-enhanced MRI using a contrast agent on the basis gadolinium. The use of contrast medium can visualize newly formed blood vessels of the endometrium, which takes place in the endometriosis.

The versatility of the MRI is a result of the variety of its subtypes. The images can be not only proton density-weighted, but also T1- or T2-weighted or diffusion-weighted. Due to this diversity, MRI images distinguish the newly formed blood vessels, connections between tissues which only slightly vary in terms of density.

Using MRI confirmed the diagnosis and extended it to detail. It allowed the accurate visualization of 2 parts of fistula: above and below abdominal muscles, in the pelvic cavity, which was difficult to visualize other methods - ultrasound and CT. Only the use of magnetic resonance of pelvis allowed to decide about laparotomy. Surgery is the only corrective treatment for refractory fistulas.

With this decision, the fistula was excised by laparotomy and the patient cured of symptoms that prevented her daily functioning.

### 3. CONCLUSION

The MRI has the advantage over CT in the diagnosis of unusual pelvic illness. In these case the fistula formation between the fallopian tube and skin was well documented and, therefore, diagnosis of a salpingo-cutaneous fistula was considered. From our experience, such injuries are best managed with open repair of the fistula.

### CONSENT

All authors declare that 'written informed consent was obtained from the patient for publication of this case report and accompanying images.

### ETHICAL APPROVAL

It is stated to confirm that the authors have obtained all necessary ethical approval. An informed consent, protection of privacy, and other human rights were taken into consideration before the study was initiated. This confirms either that this study is not against the public interest, or that the release of information is allowed by legislation.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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