

Implantation Tumours at Surgical Incision Scars.

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Abstract: Swellings in and around the surgical incision scars can pose a diagnostic dilemma to the surgeon. Both benign and malignant tumors can occur at surgical incision scars as a result of direct implantation during previous surgical procedure and can present over a variable time period post surgery. Such tumors can present as an unexpected cause of chronic abdominal pain or as a growing mass in or near a surgical scar. Abdominal wall endometriosis at surgical site is a relatively rare presentation which can present as a lump. Incisional scar recurrence of cervical carcinoma is another rare presentation in the form of a lump at previous surgical scar site. We report here two cases one benign abdominal wall endometrioma located just adjacent to previous cesarean section incision and another recurrence of cervical squamous cell carcinoma in the previous hysterectomy incision scar.

INTRODUCTION

Endometriosis affects about 1-2 % of women and it occurs when endometrial tissue forms implants outside the uterine cavity and results in pain, bleeding and scarring¹. Typical locations include the ovaries and peritoneum and less common sites involved are the rectum, inguinal canal, vagina and the superficial abdominal wall. Subcutaneous endometriosis is almost invariably associated with prior abdominal surgery². The most common surgery is a cesarean section with frequency of about 0.2% after such procedure³. When endometriosis develops as a distinct mass the condition is classified as endometrioma. It is a benign disorder characterized by the presence and proliferation of endometrial glands and stroma⁴. The pathogenesis of surgical incision associated endometriosis is mostly believed to be due to direct implantation of endometrial tissue which in turn proliferates under hormonal influence or by inducing metaplastic changes in surrounding tissues. Lymphatic and hematogenous routes, bringing in endometrial tissues to such sites, have been implicated in other theories.

Recurrence of carcinoma of the uterine cervix mainly occurs locally or regionally after treatment. The most frequent recurrence sites are the parametrium, pelvic lymph nodes and vagina. Distant metastasis usually occurs in the lungs, bone and liver. The incidence of incisional scar recurrence from cervical carcinoma is low, ranging from 0.1% to 2%⁵. There is a possibility of direct tumor seeding during the previous operation. Lymphatic and hematogenous spread can also be the cause of incision site recurrence⁶.

We report two interesting and rare cases, one of abdominal wall endometrioma near surgical scar and other of recurrence of squamous cell cervical carcinoma in surgical incision scar.

CASE REPORTS

CASE 1

A 30 year old female patient presented in surgery outdoor clinic with a painful nodule just above the left end of Pfannenstiel incision. She had undergone a cesarean section two and a half years back. On history taking it was found that she had been experiencing pain at this site for two years and pain was moderate to severe in intensity. She felt a nodule at this site for last one year. She gave a history of severe pain and increase in size of swelling during menstruation. Abdominal examination revealed nothing abnormal other than a well healed Pfannenstiel incision scar and a tender, fixed nodule about 3 x 3 cms size just above the left edge of incision.

Gynaecological and per rectal examinations were normal. Ultrasound examination was got done and it showed an irregular subcutaneous mass in left lower abdominal wall. It demonstrated an ill defined hypoechoic mass of 19x19x14 mm with irregular spiky margins and echogenic surrounding fat (Figure 1). Rest of abdomen and pelvis was normal. FNAC was got done and pathologist reported it as suggestive of endometriosis and advised excisional biopsy. A wide local excision was performed under spinal anaesthesia (Figure 2). During surgery a lump was found to be located in subcutaneous fat and was free from underlying fascia. After wide excision, irrigation of wound was done with normal saline and wound was closed primarily. Post operative recovery was uneventful. Tissue was sent for histopathological examination which confirmed diagnosis of subcutaneous endometriosis. On histopathology, microscopy revealed endometrial glands and stroma embedded in a fibrotic tissue surrounded by fat cells, no evidence of any malignancy was found.



Figure 1: Ultrasound picture of endometrioma



Figure 2: Excised endometrioma by wide excision

DISCUSSION

Subcutaneous endometriosis is almost invariably associated with prior abdominal surgery, cesarean section being the commonest². In the obstetrics and gynaecology literature the reported incidence ranges from 0.03% to 0.4%^{7,8}. Cases have been reported following cesarean section, hysterectomy and mid trimester hysterotomy. Occurrence of subcutaneous endometrioma following mid trimester hysterotomy is highest (2%), it is due to early decidua having high pluripotential capabilities which results in cellular replication⁴. It may follow other surgeries like appendectomy and hysterectomy. In incision associated endometriosis it is postulated that endometrial

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cells are transplanted during surgery, providing a means for endometrial cells to access areas previously isolated from the peritoneal cavity. Abdominal wall endometrioma is generally confined to the cutaneous or subcutaneous tissue but Rectus Abdominis muscle at times may be involved. Time interval between operation and presentation has been reported variedly from 3 months to 10 years⁹. It has been reported to be from 1 to 20 years in other series⁴. No particular type of cesarean section incision has been identified as carrying higher or lower risk for endometrioma development ;however, the Pfannenstiel incision was associated with endometrioma more often than midline incision¹⁰.

The pathogenesis of surgical incision associated endometrioma is best explained by a combination of theories. The most commonly believed and reasonable theory is that of direct implantation. During surgery endometrial tissue is seeded into the wound, this tissue proliferates under hormonal influence as endometrium in utero or by inducing metaplasia of the surrounding fascial cells to form an endometrioma. The alternate theories described are that endometrial cells reach scar site via lymphatics or haematogenous routes¹¹. There have been case reports of endometrioma of the umbilicus without prior surgery¹².

Clinical diagnosis of abdominal wall endometrioma has been confused with abscess, lipoma, haematoma, sebaceous cyst, suture granuloma, inguinal hernia, desmoid tumour, sarcoma, lymphoma, or primary and metastatic cancer¹¹. Role of needle biopsy, ultrasound, CT scan have been suggested in differential diagnosis or in getting more information about known endometrioma⁴. Treatment of abdominal wall endometrioma in general is complete surgical excision including adjacent fascia or skin where necessary. Recurrences have been reported and are managed by re-excision⁸. To prevent surgical scar endometrioma thorough saline irrigation of surgical site before wound closure is recommended¹³. It is hypothesized that failure to close the parietal and visceral peritoneum with sutures at the time of cesarean section may markedly increase the post operative occurrence of endometrioma in the incisional scar.

CASE II

A 45 year old female patient presented in surgical out door with a nodular mass in lower abdomen in midline over a surgical incision scar. On history taking it was found that she had undergone hysterectomy about 6 months back in some primary health care centre at periphery, she did not have previous records .On examination there was present a midline infraumbilical healed surgical incision scar and in the lower part of scar was seen a nodular swelling about 4 x4 cm size. It was non tender, hard in consistency and fixed (Figure 3). FNAC examination was got done, it showed squamous cell carcinoma .Gynaecological examination was asked for which revealed a hard fixed cervical growth and patient was advised a CT scan



Figure 3: Implantation malignant tumor in surgical incision scar



Figure 4: CT scan picture showing implantation tumor (squamous cell type) from carcinoma cervix.

examination which was got done and it revealed a lobulated soft tissue density mass in the POD, measuring 7x4.2x3 cm that was extending into bilateral adnexa , it showed homogenous enhancement. A soft tissue nodular mass 4.5 x 4.2 cm was seen in the subcutaneous tissue in supra pubic region which was extending into the Rectus Abdominis muscles (Figure 4).

Patient was referred to higher centre for further management as we do not have radiotherapy and chemotherapy facilities. Case was followed up at referral centre, she was given external radiotherapy.

DISCUSSION

Metastasis of cervical carcinoma to the skin is an uncommon event. Cancers of the colon, gall bladder, kidneys, ovaries and urinary bladder are known to cause surgical scar recurrence¹⁴. The possible mechanism of developing recurrence at the surgical scar may be by direct seeding of tumour cells, or by haematogenous or lymphogenous spread. Retrograde spread of tumour cells due to lymphatic obstruction was suggested by Malfetano¹⁵. Imachi and coworkers reported that most tumour cells can also be found in dilated lymphatics of skin lesions¹⁶. There are other reports of cervical cancer recurrence involving midline incision scars¹⁷. Involvement of skin in cervical cancer is a rare entity (0.1 to 2%), especially diagnosed in advanced stages and is associated with extremely poor prognosis. Adenocarcinomas are the most common histological type rather than squamous cell carcinomas in case with skin metastasis¹⁸. It has been suggested that incidence of skin metastasis tends to be increased by advancement of clinical stage. The mean interval between the diagnosis of cervical cancer and skin metastasis was reported in a range of 1 to 70 months^{15,16}. While malignancy within incision sites has been reported in the gynaecologic literature, these are generally found to be recurrences of a primary cancer.

CONCLUSION

Surgeons are at times involved in the management of swellings at previous gynaecological surgical incision scars. Possibility of endometrioma if swelling shows features of cyclic pain should be kept. Recurrence of primary cervical carcinoma in form of skin metastasis may also present as swelling in surgical scar. FNAC and radiological investigations such as ultrasound and CT scan are helpful tools in making a diagnosis. Thorough irrigation of surgical wound with saline before closure prevents seedling by tumour cells.

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