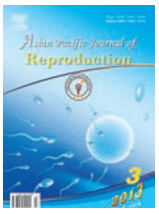
Asian Pacific Journal of Reproduction

Journal homepage: www.apjr.net



Document heading doi: 10.1016/S2305-0500(13)60155-4

Primary abdominal wall clear cell carcinoma arising from incisional endometriosis

Burcu Gundogdu[1], Isin Ureyen[1*], Gunsu Kimyon[1], Hakan Turan[2], Nurettin Boran[1], Gokhan Tulunay[1], Dilek Bulbul[3], Taner Turan[1], M Faruk Kose[1]

[1]*Gynecologic Oncology Division, Etlik Zubeyde Hanim Women's Health Teaching and Researching Hospital, Etlik Street 06010, kecioren/Ankara/Turkey*

[2]*Endoscopic Surgery Division, Etlik Zubeyde Hanim Women's Health Teaching and Researching Hospital, Etlik Street, 06010, kecioren/Ankara/Turkey*

[3]*Pathology Division, Etlik Zubeyde Hanim Women's Health Teaching and Researching Hospital, Etlik Street, 06010, kecioren/Ankara/Turkey*

ARTICLE INFO

Article history:
Received 22 May 2013
Received in revised form 6 June 2013
Accepted 10 June 2013
Available online 20 September 2013

Keywords:
Caesarean scar
Endometriosis
Clear cell carcinoma

ABSTRACT

A 49 year-old patient with the complaint of a mass located in the caesarean scar was admitted. There was a fixed mass 30×30 mm in diameter with regular contour located at the right corner of the pfannenstiel incision. Computed tomography revealed a (40×50×50) mm solid mass lesion with margins that cannot be distinguished from the uterus, bladder and small intestines and a heterogeneous mass lesion (50×45×55) mm in diameter, located in the right side of the anterior abdominal wall. Cytoreductive surgery including total abdominal hysterectomy and bilateral salpingo-oophorectomy was performed. Final pathology was clear cell carcinoma. Clear cell carcinoma arising from an extraovarian endometriotic focus was diagnosed and the patient received 6 cycles paclitaxel-carboplatin chemotherapy as adjuvant treatment. The patient who was lost to follow-up applied to our clinic 2 years after surgery with a recurrent mass in the left inguinal region. After 3 cycles of chemotherapy, the patient´s tumoral mass in the left inguinal region was excised. The result of the pathology was carcinoma metastasis. It is decided that the following treatment of the patient should be palliative radiation therapy. The patient who underwent palliative radiation therapy died of disease after 4 months of the second operation.

1. Introduction

Endometriosis is defined as the presence of endometrial stroma and glands outside of uterine cavity. Endometriosis which is rare before the menarche regresses after menopause. Prevalence of endometriosis is 7%-15% in reproductive age, 25%-30% in infertile women and its rate rises up to 40%-70% in women who suffer from pelvic pain [1,2]. Although it is generally seen in the pelvic area, we can rarely encounter it in extra pelvic organs such as lungs, bladder, urethra, brain, abdominal wall *etc*. Endometriosis in abdominal wall can develop in scar tissue after surgical procedures such as laparotomy, laparoscopy, amniocentesis or inguinal hernia repair. Among these, the caesarian scar endometriosis has the highest incidence (0.03%-0.45%) [3]. Cases of abdominal wall endometriosis developed within 6-20 years after first operation were reported. It was determined that 14.3%-26.0% of abdominal wall endometriosis cases had pelvic endometriosis [3,4].

Although endometriosis is known as a benign disease, it can undergo malign transformation at the ovary and extra-ovarian organs. However, development of malignancy at abdominal wall endometriosis is quite rare. In this article, a case of clear cell carcinoma developing from endometriotic focus in skin scar after caesarian was presented.

*Corresponding author: Isin Ureyen, Etlik Zubeyde Hanim Women's Health Reseach and Teaching Hospital, Gynecologic Oncology Division, Etlik Street, Post code: 06010, Kecioren / Ankara / Turkey
Tel: +90 312 3220180
Fax: +90 312 3238191
E-mail: isin.ureyen@gmail.com

2. Case report

A 49 year-old patient applied to our hospital with a complaint of a mass which was located in caesarian scar. In the patient's history there were two operations and last operation was 21 years ago. Her history revealed 3 masses developed in the pfannenstiel incision after caesarian and two of them were lost in time. The biopsy result of the third mass was reported as ovarian adenocarcinoma metastasis; therefore the patient was referred to our clinic.

In the patient's examination, there was a hard, fixed mass that was (30×30) mm in diameter with a regular surface and it was located approximately 3 cm upper from the inguinal area, near the right corner of pfannenstiel incision (Figure 1). In transvaginal and transabdominal ultrasonography, it was seen on the incision, close to the midline, under the skin, as a (23×25) mm heterogeneous mass which is likely to be an endometrioma and in the right, (37×34) mm solid mass was imaged under the skin. In computed tomography (CT); (40×50×50) mm solid mass which was observed at the left lateral side of bladder and its margins were undistinguished from the bladder, anterior portion of the uterus and intestines. It held contrast material after intravenous contrast material injection. Besides, in the right side of the anterior abdominal wall, there was a heterogeneous second mass (50×45×55) mm in dimension whose boundaries were undistinguished from anterior abdominal muscles, reached to the subcutaneous tissue and it held contrast material after intravenous contrast material injection (Figure 2). CT revealed that the uterus was deviated to the left, its boundaries could not be distinguished from the defined mass and both of the ovaries could not be seen so the source of the mass could not be determined. The upper abdomen CT was normal. Any pathology wasn't found in upper and lower gastrointestinal system endoscopy, breast examination, mammography and breast sonography. Tumor markers levels were in normal range except for the level of blood serum Ca125 (84.9 IU/mL).

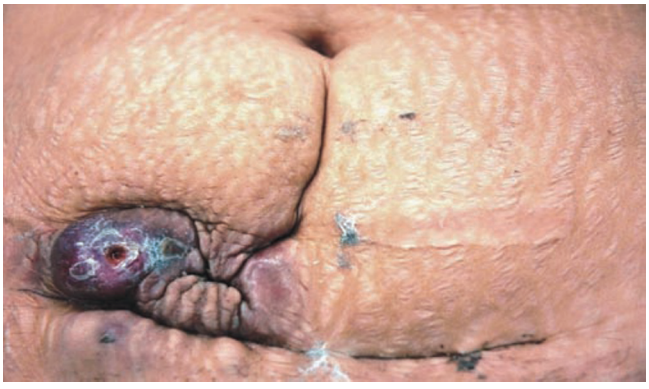


Figure 1. Tumoral lesion developing in caesarian scar.

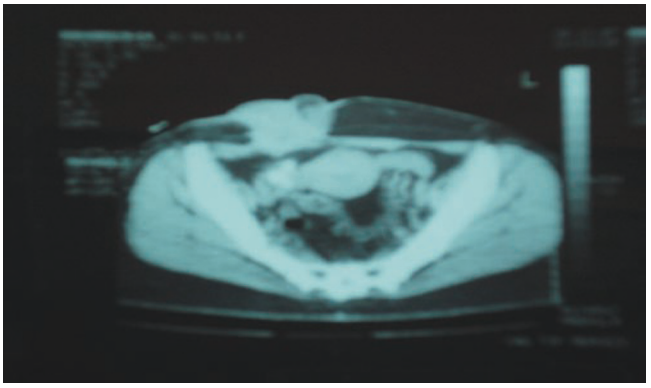


Figure 2. Invasion of tissues under the skin by the carcinoma developed in the skin.

Patient's abdomen was opened with the xiphoid-pubic midline incision and in intraoperative observation a tumor beginning from the mass on skin including subcutaneous tissue, fascia and muscle was seen. The fundus of the uterus was adherent to that mass. Except this, internal genitalia were evaluated as normal. In intraoperative period, the patient was evaluated by general surgeon and it was decided that the tumor did not arise from gastrointestinal system. Total abdominal hysterectomy and bilateral salpingo-oophorectomy were performed and the pathological material was evaluated with frozen/section. The conclusion was reported as "there is no malignity in internal genitals".

After that, in order to evaluate the surgical borders, biopsy was taken from the below, upper and lateral portions of the tumor that included the skin, and it was evaluated by frozen/section. The result of the biopsy was reported negative. Thereafter, tumor was excised including the skin, subcutaneous tissue, fascia and half of the rectus muscle thickness and infracolic omentectomy was done. Fascial defect developed following this excision was repaired by herniography with prolen mesh. In order to provide symmetry, panniculectomy was done on the right side. In the postoperative period, any problem in the recovery process wasn't observed.

The paraffin block showed that the tumoral mass including skin, subcutaneous tissue, fascia and muscle was clear cell carcinoma which grew from the endometriotic focus (Figure 3). Endometriotic focus and tumor were not observed in omentum or internal genital organs. The result of the peritoneal cytology was negative. The patient was accepted as having clear cell carcinoma arising from endometriotic focus. The patient took paclitaxel-carboplatin chemotherapy as adjuvant treatment. Following 6 cycles of chemotherapy, the results of the physical examination, laboratory (Ca125: 15.3 IU/dL) and ultrasound were normal. Thereafter, it was planned that the patient would be followed-up every 3 months in the first 2 years, every 6 months until fifth year and every year after 5 years. Patient came to controls regularly in the first year and had no recurrence. However,

she did not come to control examinations thereafter and applied with a fixed, infected, multiloculated mass, (7×8) cm in dimension which was located in inguinal area after 2 years from the operation. In magnetic resonance imaging (MRI), a cystic, thick-walled mass 26 mm in diameter, located in the middle portion of pelvic area and multiple lymphadenopathies in bilateral inguinal areas, the biggest of which was (65×47) mm in dimensions were determined. These were considered as recurrence. The Ca125 value was 103 IU/mL. Application of the paclitaxel-carboplatin chemotherapy and operation following it was planned. After 3 cycles of chemotherapy, partial clinical answer was obtained and tumoral mass which is located in the left inguinal area was excised with a plastic surgeon. The defect was closed with the rotation flap taken from the anterior abdominal wall. The renovation of the tissue defect which was remained in lateral section was made with the help of the split-thickness skin grafts (STSG) which was taken from the lateral portion of the thigh. The result of the pathology was reported as metastatic carcinoma. After surgery, patient took 2 more cycles of paclitaxel-carboplatin chemotherapy. One month later from the last chemotherapy, an infected and necrotic ulcer lesion (10x10) cm in dimension was observed on the left inguinal area. In the MRI, a big mass which was infiltrative to the parailiac, inguinal and the obturator spaces, iliopsoas, adductor group, quadriceps femoris muscles on the left side was detected. The mass extended to the perineum. There were masses 5 cm in diameter at the right obturator and inguinal spaces. The signal strength of the bone marrow was lowered heterogeneously and it had heterogeneous contrasting (bone metastasis?). Since the patient had surgery before and the lesion progressed fast, surgery was not considered for the recurrence in the inguinal area. It was decided that the treatment would be palliative radiotherapy. Patient who had palliative radiotherapy for 1 month died of disease after 31 months following the primary cytoreductive surgery and 3 months later from the secondary cytoreduction surgery.

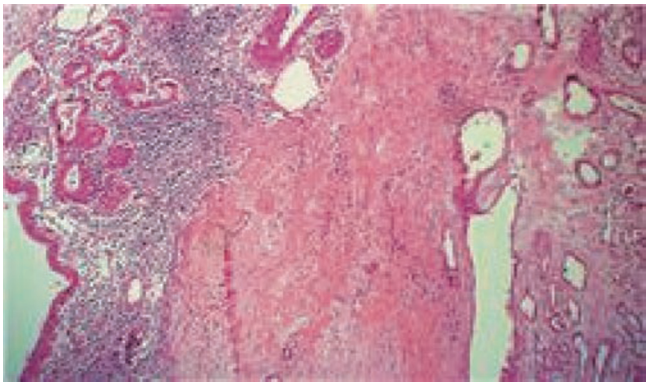


Figure 3. Areas of the clear cell carcinoma (on the right) arising from the focus of the endometriosis (on the left).

3. Discussion

20%-50% of the abdominal wall endometriosis is diagnosed preoperatively. Clinical presentation is typically as a growth of a mass on the surgical scar and cyclic menstrual pain. In the differential diagnosis, it should be kept in mind that the mass can be confused with abscess, hematoma, hernia, desmoid tumor, sarcoma and metastatic diseases. The abdominal wall endometriosis can be seen as a cystic, polycystic, solid or mixed mass in ultrasound. Since the result may differ through menstrual cycle, ultrasound is not a specific imaging technique [3]. CT and MRI may help in diagnosis because it's image is similar to pelvic endometriosis in these imaging modalities [5].

It was determined that fine-needle aspiration biopsy increased the risk of recurrence [6,7]. Whenever an aspiration biopsy is applied, it is recommended that the place of biopsy should be resected during the operation [7].

Different theories were suggested about the pathogenesis of endometriosis. The first theory was defined by Sampson *et al*. as the implantation theory. According to that, during the menstruation, endometrial cells pass from fallopian tubes and implant to the pelvic structures around [7, 8]. This theory helps us to understand the abdominal wall endometriosis. During the cesarean, endometrial cells spread to the abdominal cavity and to the uterine incision. However, this theory cannot explain the existence of endometriosis in some organs such as lung, kidney and brain in which endometriosis is rarely seen. Halban *et al*. suggested the vascular dissemination theory [7,9]. According to this theory, endometrial cells pass to circulatory system by lymphatic channels and transfer to the ectopic tissues. The third theory is the development of metaplasia of coelomic epithelium and its transformation to the endometrial tissue in abdominal wall [7, 10].

Although endometriosis is known as a benign disease, it can undergo malign transformation at the ovaries and extraovarian organs [8]. Nevertheless, development of malignity in abdominal wall endometriosis is quite rare. Sampson *et al*. defined 3 criteria for the progression ovarian endometriosis to malignancy in 1925 [11]. These criteria are the existence of neoplastic and benign endometrial tissues together in the tumor, observation of the histological structure showing endometrial origin and the absence of tumor in another focus. The clinical and pathological studies that have been done recently pointed out that endometriosis can be a precursor lesion for ovarian cancer. In the group known as endometriosis associated ovarian cancers (EAOC), the most frequent types of cancers are endometrioid and clear cell carcinoma. Twenty-five percent of endometriosis having malign transformation originated from extraovarian tissues and the endometrioid and clear cell carcinoma are the most frequently identified types [12]. Since the probability of growth of endometriosis on surgical scar tissue in abdomino-uterine surgeries is higher than abdomino-pelvic

surgeries, the patients with malign transformation usually have a history of abdomino-uterine surgery [13-15].

In treatment, radical surgery applied as wide excision with chemotherapy and radiotherapy may be the preferred treatment. However, there is not enough data showing that this treatment improves the prognosis. In literature, 10 patients had malign transformation of abdominal wall endometriosis and they were applied different treatment protocols including only surgery, surgery and chemotherapy, surgery and radiotherapy, surgery with chemotherapy and radiotherapy. Four out of 10 patients died of this disease. Two of these patients had clear cell carcinoma. The patient in the presented case took adjuvant chemotherapy after the primary cytoreductive surgery. Two years later from the first cytoreductive surgery, a recurrence developed and in spite of the second cytoreductive surgery with chemotherapy and radiotherapy, the disease progressed and the patient died of disease after 31 months following primary cytoreductive surgery.

We don't have enough information about the prognosis of the patients with malign transformation from extraovarian endometriosis due to limited number of reported cases [16,17,19]. While tumors which occurred in extragonadal areas have a better prognosis with respect to tumors occurring in pelvic region, clear cell carcinoma has a worse prognosis compared to endometrioid carcinoma [18,19].

In conclusion, determining the underlying mechanisms and the risk factors of malign transformation of abdominal wall endometriosis may help us to understand the tumorigenesis of the ovarian cancer. Besides, this may give us the chance of taking precautions to prevent the development of cancer from this pathology.

Declare of interest statement

We declare that we have no conflict of interest.

References

[1] Ozkan S, Murk W, Arici A. Endometriosis and infertility: epidemiology and evidence-based treatments. *Ann N Y Acad Sci* 2008; **1127**: 92-100.

[2] Lapp T. ACOG issues recommendations for the management of endometriosis. American college of obstetricians and gynecologists. *Am Fam Physician* 2000; **62**(1431): 1431, 1434.

[3] Zhao X, Lang J, Leng J, Liu Z, Sun D, Zhu L. Abdominal wall endometriomas. *Int J Gynaecol Obstet* 2005; **90**: 218-222.

[4] Blanco RG, Parith VS, Shah AK, Gumbs MA, Schein M, Gerst PH. Abdominal wall endometriomas. *Am J Surg* 2003; **185**: 596-598.

[5] Vlahos NF, Economopoulos KP, Fotiou S. Endometriosis, *in vitro* fertilization and the risk of gynaecological malignancies, including ovarian and breast cancer. *Best Pract Res Clin Obstet Gynaecol* 2010; **24**(1): 39-50.

[6] Kaunts A, Di Sant'Agnese PA. Needle tract endometriosis: an unusual complication of amniocentesis. *Obstet Gynecol* 1979; **54**: 753-755.

[7] Horton JD, Dezee KJ, Ahnfeldt EP, Wagner M. Abdominal wall endometriosis: A surgeon's perspective and review of 445 cases. *Am J Surg* 2008; **196**(2): 207-212.

[8] Luciano AA, Pitkin RM. Endometriosis: approaches to diagnosis and treatment. *Surg Annu* 1984; **16**: 297-312.

[9] Higgins JP, Thompson SG, Deeks JJ. Measuring inconsistency in meta-analyses. *BMJ* 2003; **327**: 557-560.

[10] Halban J. Metastatic hysteroadenosis. *Wien Klin Wochenschr* 1924; **37**: 1205-1206.

[11] Sampson JA. Endometrial carcinoma of the ovary arising in endometrial tissue in that organ. *Arch Surg* 1925; **10**: 1-72.

[12] Mandai M, Yamaguchi K, Matsumura N, Baba T, Konishi I. Ovarian cancer in endometriosis: molecular biology, pathology, and clinical management. *Int J Clin Oncol* 2009; **14**: 383-391.

[13] Chatterjee SK. Scar endometriosis: a clinicopathologic study of 17 cases. *Obstet Gynecol* 1980; **56**: 81-84.

[14] Markopoulos C, Gogas H, Eleftheriou G, Floros D. Endometrioid carcinoma arising in a scar of caeserean section. Case report. *Eur J Gyneacol Oncol* 1996; **17**: 520-521.

[15] Park SW, Hong SM, Wu HG, Ha SW. Clear cell carcinoma arising in a cesarean section scar endometriosis: A case report. *J Korean Med Sci* 1999; **14**: 217-219.

[16] Alberto VO, Lynch M, Labbei FN, Jeffers M. Primary abdominal wall clear cell carcinoma arising in a caesarean section scar endometriosis. *Ir J Med Sci*. 2006; **175**(1): 69-71.

[17] Van Gorp T, Amant F, Neven P, Vergote I. Endometriosis and the development of the malignant tumours af the pelvis. A review of literature. *Best Pract Res Clin Obstet Gynecol* 2004; **18**: 349-371.

[18] Benoit L, Arnould L, Cheynel N. Malignant extraovarian endometriosis: a review. *Eur J Surg Oncol* 2006; **32**: 6-11.

[19] Sergent F, Baron M, Le Cornec JB, Scotte M, Mace P, Marpeau L. Malignant transformation of abdominal wall endometriosis: a new case report. *J Gynecol Obstet Biol Reprod* 2006; **35**: 186-190.