

Clear Cell Carcinoma of the abdominal wall

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A – Study Design
B – Data Collection
C – Statistical Analysis
D – Data Interpretation
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ABSTRACT:

Background: Clear cell carcinoma in scars after cesarean section is extremely rare, with only 22 cases reported in the literature. Management of this condition needs to be further explored. Here, we report of a patient with clear cell carcinoma of the abdominal wall that developed 35 years after cesarean section.

Case Report: The material of the study was a group of 61 patients divided into two groups. Group I – 35 deaf or with profound sensorineural hearing loss children (the pupils of the deaf and hard of hearing school), aged 5–17 years (average 9,2 years), 14 males, 21 females, II – control group comprised 26 normal hearing patients, aged 5–16 years (average 10,4 years), 14 males, 12 females (patients of Department of Pediatric Otolaryngology, Audiology and Phoniatics, Medical University of Lodz). In both groups, exon 2 sequencing of GJB2 gene was performed.

Results. A 58-year-old woman was admitted to our department due to abdominal pain and a progressively growing mass in the abdominal wall. Based on biopsy, a preliminary diagnosis of clear cell carcinoma was made. A wide surgical excision of the tumor with clear margins, hysterectomy with bilateral salpingo-oophorectomy, and abdominal wall reconstruction using synthetic mesh were performed. The patient was discharged in good condition after fifteen days of hospitalization. The patient remained recurrence-free 6 months after the treatment.

Conclusions: Lack of standardized management of rare malignant transformations hinders patient care. Due to a growing number of cesarean deliveries, we can expect clear cell carcinoma prevalence of the abdominal wall to increase. Therefore, patients and clinicians should attend to any pain, itching, or change in the size of abdominal wall scars.

KEYWORDS:

Clear cell carcinoma, cesarean delivery, malignant transformation scar

BACKGROUND

Numerous neoplasms can involve the abdominal wall, including various skin tumors (basal cell carcinoma, squamous cell carcinoma and melanoma), abdominal wall neoplasms (mainly rhabdomyosarcoma, malignant fibrous histiocytoma, leiomyosarcoma), or tumors that invade the abdominal wall by direct extension (colon and cervical cancer) [1,3]. Recently, more and more tumors are diagnosed due to direct implantation at sites of laparoscopy, needle aspiration of the viscera, or percutaneous gastrostomy tube placement in patients with head and neck cancer. Clear cell carcinomas that develop in abdominal wall scars are extremely rare [2]. Masses that develop in surgical scars pose a diagnostic dilemma because they resemble hernias, abscesses, hematomas, and desmoid tumors. Abdominal masses found on physical examination are usually confirmed on imaging, and needle biopsy can determine tumor type [4]. Here, we report of a patient with clear cell carcinoma in the abdominal wall at the site of previous cesarean section scar.

CASE PRESENTATION

A 58-year-old woman with hypertension and type 1 diabetes was admitted in October 2015 due to a progressively growing mass in a cesarean section scar. Her gynecological history included two cesarean sections, 38 and 35 years ago. The scar after the first delivery was painful and suppurative. She had no family history of gynecological malignancies and never received hormone therapy. She complained of profuse, irregular, painful menstruations; she experienced menopause 3

years ago. The patient was examined by a surgeon and a gynecologist. Computed tomography and biopsy of the tumor were conducted. CT revealed a tumor within the abdominal wall, without any abnormalities in the abdominal cavity. The biopsy of the tumor revealed cells characteristic for clear cell carcinoma (immunophenotype: CK7+, EMA+, MCK+, VIM, RCC-, CD10-, ER-, CEA-). The patient underwent surgery in March 2016 (Fig I).

First, margins of the tumor were determined (approximately 25x15cm), and the tumor was dissected using ligasure. The tumor was solid, and did not invade local tissues. However, it infiltrated subcutaneous fat, fascia, and rectus abdominis muscle. The tumor weighed 1.27 kg.

Considering patient age and a tendency to malignant transformation, hysterectomy was performed. The abdominal wall defect was repaired using synthetic Intramesh 3 FBIO W3 3030 (30x30cm), composed of polyethylene terephthalate (polyester) on the outside and dimethylsiloxane (silicone) on the inside to prevent adhesion formation.

The surgery was finished by the bringing margins of the wound together. The postoperative period was uneventful, and the patient was discharged on the ninth postoperative day. The patient remained recurrence-free 6 months after treatment and was in good condition. After a multidisciplinary consultation, we decided not to administer adjuvant chemotherapy but to follow-up the patient every 3 months. The patient was also advised to wear an abdominal belt, take care of the wound, and take anti-coagulants (Fig II).

Tab. I. Summary of clear cell carcinoma that developed in episiotomy scars [12]. NA, no data in the literature; NED, no evidence of disease; TAH, total abdominal hysterectomy; BSO, bilateral salpingo-oophorectomy.

AUTHOR	PATIENT AGE (YEARS)	HISTOLOGY	TREATMENT	FOLLOW-UP	COEXISTING ENDOMETRIOSIS ON HISTOLOGY
Matsuo, 2009	37	Clear cell carcinoma	Radical resection, TAH, BSO, pelvic lymph node dissection, omentectomy, chemotherapy	Recurrence	No
Schnieber, 1986	40	Clear cell carcinoma	Radical resection, TAHBSO, radiotherapy, progesterone	Died due to index disease	Yes
Hitti, 1990	46	Clear cell carcinoma	Radical resection, TAH, BSO, excision	NED	Yes
Miller, 1998	38	Clear cell carcinoma	Radical resection, TAH, BSO, radiotherapy	NED	Yes
Sergent, 2006	45	Clear cell carcinoma	Radical resection, BSO, chemotherapy	Died due to index disease	No
Bats, 2008	38	Clear cell carcinoma	Radical resection, TAHBSO, chemotherapy	NED	Yes
Park, 1999	54	Clear cell carcinoma	Radical resection, radiotherapy	NED	Yes
Ishida, 2003	56	Clear cell carcinoma	Radical resection, radiotherapy	Died due to index disease	No
Alberto, 2006	38	Clear cell carcinoma	Radical resection, chemotherapy, radiotherapy	NA	No
Williams, 2009	53	Clear cell carcinoma	Radical resection, TAH BSO, chemotherapy, radiotherapy	Died due to index disease	No
Rust, 2008	42	Clear cell carcinoma	Radical resection	NA	Yes
Harry, 2007	55	Clear cell carcinoma	Radical resection, radiotherapy	NED	Yes
Achach, 2008	49	Clear cell carcinoma	Radical resection, chemotherapy	NA	Yes

Abbreviations used:

BD - no data available in the literature [12]

BDOW - no evidence of disease

PH - transabdominal hysterectomy

SPA - bilateral salpingo-ovariectomy

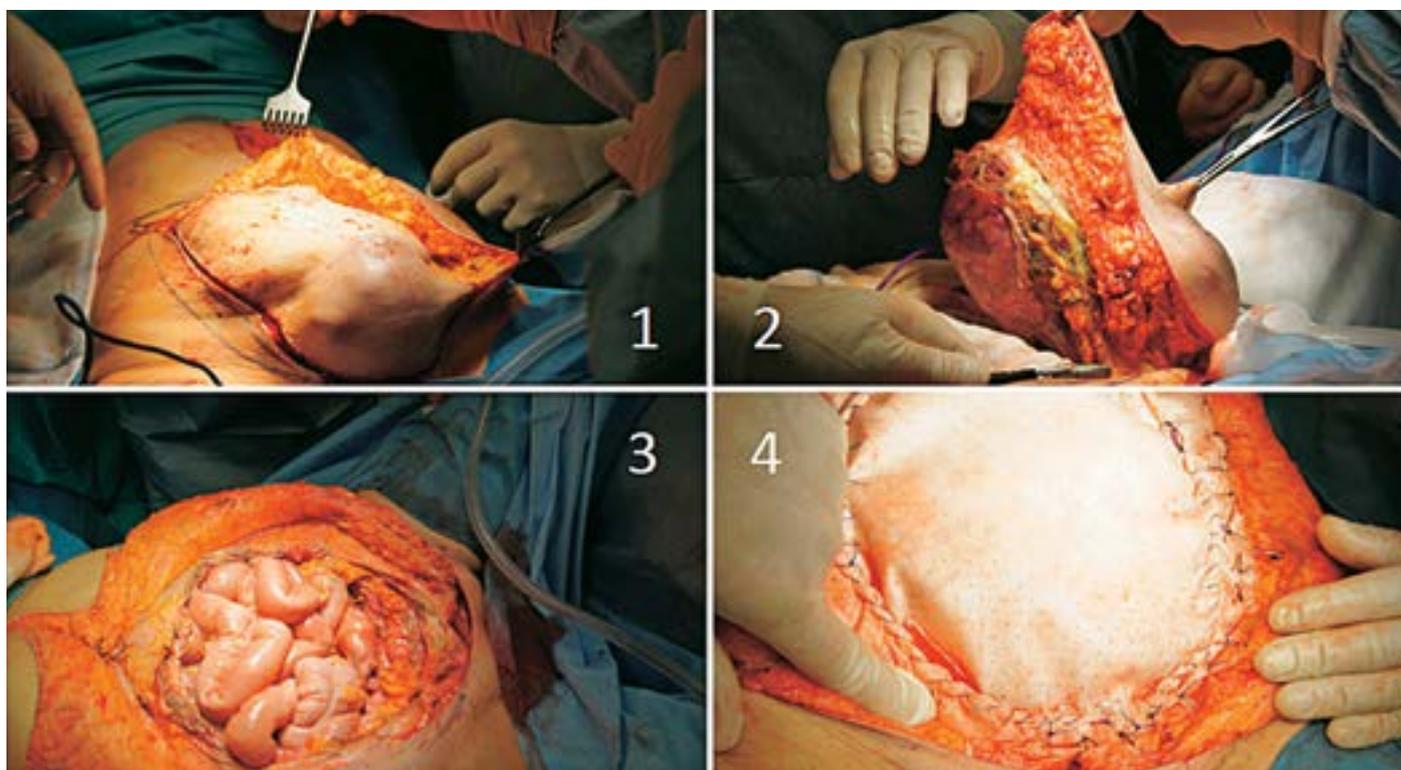


Fig 1. Determination of tumor margins (1). Tumor during excision (2). Abdominal wall defect after tumor excision (3). The defect was covered with synthetic mesh (4).

DISCUSSION

Clear cell carcinoma is usually a type of renal, pancreatic, ovarian, and endometrial cancer. Malignant endometrial clear cells have

been reported; however, in our case, we detected benign endometrial cells, and only typical clear cell adenocarcinoma was found in tumor tissue. Endometriosis that involves skin occurs only in 0,5%-1% of patients with that disease, and it typically affects surgical scars



Fig II. The patient before (1) and right after surgery (2), on the 16th postoperative day (3), and 8 months after treatment (4).

[2]. Our patient was never diagnosed with endometriosis; however, considering a history of cesarean section, painful and irregular menstrual cycles, slow scar healing, and increased pain, we suspected endometriosis. This theory is based on the observations of Sampson. In 1925, he proposed three criteria for diagnosing endometriosis-related malignancies [3]. Endometrium-like tissues can appear in the abdominal wall due to a iatrogenic transfer of endometrial cells, and they can be completely invaded by carcinoma. This is the most likely explanation why endometrium cells were not detected in the tumor. Table 1 presents previously reported cases of clear cell carcinoma that developed in cesarean section scars and different treatment methods. Radical excision was usually performed, with or without adjuvant therapy [4-7], radiation therapy [8], or adjuvant chemotherapy combined with radiation therapy [9-10]. In our patient, due to a substantial size of solid tumor that did not invade local tissues, chemotherapy was not administered. The patient recovered well and remains under follow-up (Table I).

A substantial abdominal wall defect was covered with a synthetic mesh. Materials used in such procedures should meet a number of criteria such as adequate strength and flexibility; they should be chemically inert, should not induce infections or allergic reactions, and should not be carcinogenic. Intramesh is durable, highly resistant, and easy to use [12]. Intramesh is made of non-sticky surface thanks to which it can be implemented intraperitoneally. Unfortunately, high cost and low availability significantly limit its use. Treatment of abdominal wall defects can sometimes be challenging. According to Jernigan, abdominal hernia was the most frequent complications associated with the use of nets [13], with

prevalence of 12-50%. Recurrent hernias pose a significant problem for reconstruction surgeries, and their occurrence ranges from 15% to 50% [13]. Based on the available literature, the use of polypropylene meshes was indicated in our patient, especially because it reduced postoperative pain and expedited return to normal physical activity. In case of large abdominal wall defects, synthetic implants are used most frequently with or without skin grafts. If this method cannot be used, reconstruction using patient's own tissues can be performed using musculocutaneous flaps with muscle tensioning broad fascia (TFLF), rectus femoris (RFF), and fasciocutaneous flaps from the anterolateral thigh. In infected wounds, one can also use a surgical technique that involves separation of the fascio-muscle layers, named "component separation", in order to close the abdominal wall, which allows tensionless reconstruction (14,15). Nevertheless, due to simplicity of mesh implantation and the fact that it does not affect any other part of the body, it is the method of choice in the absence of contraindications.

CONCLUSION

Clear cell carcinoma of the abdominal wall that develops in cesarean section scars is very rare, with only 22 cases reported in the literature. To date, no standard treatment has been established. It is important that doctors and patients be aware of any changes in the appearance of scars, which should raise suspicion of malignant transformation. Our patient remained recurrence-free 8 months after treatment. The wound healed properly, and there was no postoperative hernia. The patient's current condition is good, and she is followed-up every 3 months.

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