Double laparotomy wound recurrence of endometrial carcinoma

G.C. Balbi, A. Cardone, A. Monteverde, M. Passaro, L. Montone[1], R. Rossiello[1], S. Visconti, M. Battisti, E. Cassese, I. Landino

Department of Obstetrics and Gynecology
[1]Department of Pathological Anatomy, "L. Armanni" Second University of Naples (SUN), Naples (Italy)

Summary

Introduction: Abdominal scar recurrence of endometrial carcinoma after abdominal total hysterectomy is very rare. We report a case of a 65-year-old woman who had two recurrences in the abdominal incisional scar after total hysterectomy.

Case report: A 65-year-old woman underwent total hysterectomy with bilateral salpingo-oophorectomy and pelvic lymphadenectomy because of well-differentiated endometrial adenocarcinoma (Stage IIB). Thus, the patient was treated by external beam radiotherapy. She developed two recurrences in the abdominal incisional scar two and three years after total hysterectomy, respectively. Surgery plus chemotherapy and surgery plus hormonal therapy were used for treatment of the first and second scar recurrence, respectively.

Conclusions: It is a very intriguing and controversial biologic question how neoplastic cells can implant and grow in an abdominal scar without other concomitant metastases. We report a review of the literature and the possible mechanism of recurrences in laparotomy wounds.

Key words: Endometrial cancer; Recurrence; Survival of recurring patients.

Introduction

Recurrences in surgical scars are frequently observed in malignant tumors of the colon, ovary, kidney and gall bladder [1]. Abdominal scar recurrence of endometrial carcinoma after abdominal total hysterectomy or laparoscopic surgery is very rare and few cases have been reported in the literature [2-13]. It is a very intriguing and controversial biologic question how neoplastic cells can implant and grow in an abdominal scar without other concomitant metastases. Therefore, we thought it useful to report a case of a 65-year-old woman who developed two recurrences in the abdominal incisional scar two and three years after total hysterectomy, respectively. A review of the literature is also presented.

Case report

A 65-year-old woman was admitted to our Department of Obstetrics and Gynecology in February 2002 because of postmenopausal vaginal bleeding. An endometrial biopsy revealed well-differentiated adenocarcinoma. CA 19-9, CA 125, and CA 15-3 were increased (105.50 U/ml, 41 U/ml and 29.31 U/ml, respectively). Therefore the patient underwent total hysterectomy (subumbilical-pubic incision) with bilateral salpingo-oophorectomy and pelvic lymphadenectomy. After surgery the tumoral markers were normal. Pathological examination of the operative specimen confirmed the diagnosis of well-differentiated endometrial adenocarcinoma, with esophytic growth and extension to more than half of the underlying myometrium, arising from an endometrial polyp and extending to the stromal uterine cervix. Lymph node specimens did not reveal any metastases. The case was assigned to the International Federation of Gynecology and Obstretics (FIGO) surgical Stage IIB. Thus, the patient was treated by external beam radiotherapy; 5400 cGy were delivered in 25 fractions with six megavolt photons, using opposing tangential fields. Radiotherapy was well tolerated. After treatment, follow-up clinical evaluations performed every three months were reassuring, including a normal chest Xray, abdominal-pelvic computed tomography (CT) and tumor markers. She remained disease-free until February 2004 when she complained of swelling in the abdominal scar (CA 15.3 = 35.7 U/ml). The mass was about 2 cm in diameter and was localized in the paraumbilical region above the upper site of the incisional scar and outside the pelvic irradiation field. Ultrasonography of the abdomen showed three hypoechoic solid nodules 1.5 cm in diameter just under the skin. An abdominal-pelvic CT scan confirmed the presence of a soft tissue mass involving the lower left rectus muscle. Fine needle aspirates from the mass demonstrated moderately differentiated adenocarcinoma. Wide resection of these nodules was performed and pathological examination of the operative specimens confirmed the diagnosis of moderately differentiated adenocarcinoma (Figure 1). The resected margins were negative for malignancy. There was no radiographic evidence of other metastases. Thus the patient was treated with polychemotherapy including carboplatin (400 mg) and liposomal adriamycin (31 mg) once every 28 days for six cycles. The mass had regressed by the end of the treatment. Two months after completion of chemotherapy there was no evidence of recurrence as confirmed by normal chest Xray, pelvic ultrasonography and abdominopelvic CT scan. After a year, the patient developed a new recurrence of a moderately differentiated adenocarcinoma (Figure 2) in the abdominal incisional scar (CA15.3 = 30 U/ml) and outside the pelvic irradiation field (Figure 3). Moreover the immunohistochemical analysis showed estroprogestinic receptor positivity, thus the patient was started on MPA (methoxyprogesterone acetate) (1g weekly). At present she is disease-free.

Revised manuscript accepted for publication November 12, 2005

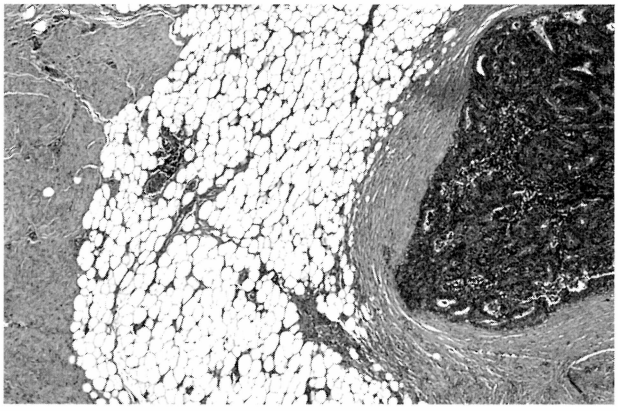

Figure 1. — First recurrence in the surgical scar (hematoxylin and eosin x 50).

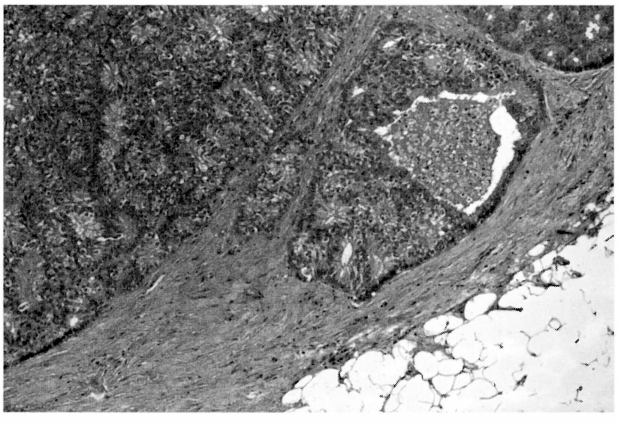

Figure 2. — Second recurrence in the surgical scar (hematoxylin and eosin x 50).

Conclusion

Endometrial cancer is the most common gynecologic neoplasm (14). Most endometrial cancer relapses are either pelvic or distant metastases, while recurrences in a laparotomy wound are rare. In fact, to the best of our knowledge, only eight cases have been reported in the literature [2-13]. The various clinical features of all patients reported in the literature are given in Table 1.

The spread of neoplastic cells through the lymphatics and blood vessels is commonly the cause of skin metastases of endometrial cancer which generally appear as multiple nodules at various body sites [15]. It is more difficult to explain a solitary skin recurrence without coexistent metastases at other sites after a long disease-free interval. In such cases, spread via the lymphatics or blood vessels might be ruled out as the source of the metastases. It could also hypothesized that free malignant cells in the peritoneal fluid may implant in the wound [4, 16]. Nonetheless, peritoneal cytology was negative in the present case and thus direct contamination of the surgical scar by peritoneal malignant cells has to be rejected. Therefore, a solitary scar recurrence is more likely due to cells being implanted in the wound during surgical management. How tumor cells may implant themselves in abdominal scars is not well defined, but some mechanisms have been suggested such as the penetration of neoplastic cells through the uterine wall or spilling through the fallopian tube or cervical canal during the surgical management [10, 11]. Indeed, penetration through the uterine wall may be explained by the deep extension of carcinoma to the uterine wall as in this case and other cases of scar recurrences described in the literature (8, 10). In the case recently reported by Lorenz *et al.* (9), recurrence in the abdominal scar occurred 14 years after total hysterectomy. Because of this very long interval, it has been hypothesized that metastatic neoplastic cells remain dormant and grow slowly outside the proper origin site. On the other hand, wound repair mechanisms give rise to some events such as the production of reactive oxygen species and angiogenetic factors, activation of growth factors and altering of the signal-transduction process that activates cell-proliferation to replace necrotic tissue cells [17]. These events may induce an inflammatory oncotaxis, as first proposed by Der-Hagopian and Sugarbaker [18], so that circulating malignant cells can be attracted to the site of the incisional scar

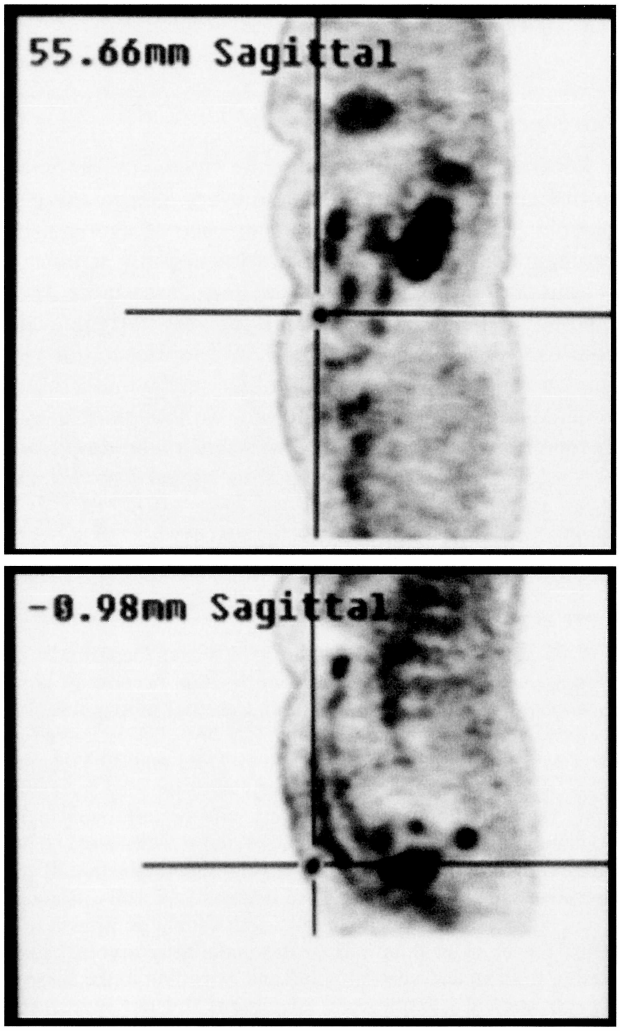

Figure 3. — Abdominal-pelvic CT scan showing the second laparotomy wound recurrence.

Table 1. — *Clinical features of reported patients with scar recurrence from endometrial cancer: survey of the literature.*

References	Year	Age	Histopathology	Stage	Initial treatment	Interval after which rec was detected (years)	Treatment of scar rec
Chapman G.W. (13)	1988	65	NA	NA	RT	7	CT + progestin
Espinos J. (5)	1993	77	NA	Ic	Surgery* + EBRT+ BT	1 (month)	EBRT+ progestin
Curtis M.G. (4)	1994	50	Adenocarcinoma	Ib	Surgery* + P32W + progestin	1,5	Surgery^ + EBRT
Khalil A.M. (6)	1998	58	Adenocarcinoma	Ic	Surgery *+ EBRT	5	Surgery^ + Progestin
Kotwall C.A. (7)	1994	65	Adenocarcinoma	Ic	Surgery*	7	Surgery^
Macias V. (10)	2003	64	Adenocarcinoma	IIIA	Surgery* + EBRT + CT	(I) 3 (II) 6,5	Surgery^ + CT Surgery^ +BT + EBRT + progestin.
Joshi S.C. (8)	2003	NA	Papillary adenocarcinoma	II	Surgery *+ CT	1,5	RT + CT
Lorenz U. (9)	2004	NA	NA	I	Surgery*	14	Surgery^
Present report	2004	65	Adenocarcinoma	IIB	Surgery* + RT	(I) 2 (II) 3	Surgery^ + CT Surgery^+ progestin

Surgery*: total abdominal hysterectomy with salpingo-oophorectomy; Surgery^: Resection; EBRT: external-beam radiation therapy; BT: brachytherapy; P32W: intraperitoneal 32 P washings; NA: not available; rec: recurrence.

more than to other sites. The literature data suggest that treatment of the laparotomy scar must be carried out with curative intent when it is the unique initial failure site because of the long disease-free interval.

Recurrences in surgical scars can be treated with surgery (mass resection), external-beam radiotherapy (alone or postoperative), brachytherapy, chemotherapy or hormonal therapy. It is difficult to establish the optimal treatment because of the rarity of this recurrence. We chose surgery plus chemotherapy and surgery plus hormonal therapy for the treatment of the first and second scar recurrence, respectively. In endometrial cancer, irradiation of the pelvis after hysterectomy is commonly used to prevent locoregional failures. However, patients irradiated after hysterectomy developed wound recurrences. In fact, although radiation therapy portals include the abdominal incision, this site may receive as little as one-quarter the prescribed radiation dose, depending on the technique used. Therefore, it is very difficult to modify the current radiation therapy plan because of possible toxicity, mainly intestinal. Tumor grade and depth of myometrial invasion are the major prognostic factors for both locoregional and distant tumor recurrence [19]. Thus, a different radiation therapy plan for patients with poorly differentiated tumors might be surmised. To conclude, we think that routine follow-up of patients with endometrial carcinoma should include careful palpation of the surgical scar to detect recurrence at the earliest.

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Address reprint requests to:
G.C. BALBI, Prof.
Via Cimarosa, 84
80127 Napoli (Italy)