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Abdominal wall recurrence in uterine cervix carcinoma: report of 3 cases and review of literature

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Summary. Abdominal wall recurrence is not seen commonly with uterine cervix carcinoma. We present here two cases of scar site recurrence and one abdominal wall recurrence, after radical surgery in uterine cervix carcinoma. Review of the literature showed 45 cases of abdominal recurrence after surgery in uterine cervix carcinoma. Two possible mechanisms of recurrence after surgery may be direct implantation of tumor cells at the time of surgery or fibrin platelet deposits in the microcirculation of the surgical wound that may have trapped circulating tumor cells. Recurrences with such atypical manifestations call for more vigilance in follow up of uterine carcinoma cervix.

Key words: abdominal wall, cervical carcinoma, incisional recurrence

«Recidive alla parete addominale di carcinoma della cervice uterina: resoconto di 3 casi e revisione della letteratura»

Riassunto. La recidiva alla parete addominale non si verifica comunemente nel carcinoma della cervice uterina. Presentiamo due casi di recidiva cicatriziale e uno di recidiva alla parete addominale dopo chirurgia radicale nel carcinoma della cervice uterina. La revisione della letteratura ha riportato 45 casi di recidiva addominale dopo chirurgia in caso di carcinoma della cervice uterina. Due possibili meccanismi di recidiva dopo chirurgia possono essere un impianto diretto delle cellule tumorali durante la chirurgia stessa oppure depositi di fibrina piastrinica nel microcircolo della ferita chirurgica che hanno intrappolato cellule tumorali circolanti. La ricomparsa della patologia con manifestazioni così atipiche, richiede una maggior vigilanza nel follow-up del carcinoma della cervice uterina.

Parole chiave: parete addominale, carcinoma della cervice, recidiva da incisione

Introduction

Carcinoma of the uterine cervix is the most common malignancy to affect women in developing countries. Cervical cancer mainly spreads through direct mechanisms and through lymphatics, and in advanced cases haematogenous spread can also be seen. The greater the extent of a primary tumour, the more likely is metastasis to pelvic lymphnodes. Distant metastasis is not seen frequently and when found, is usually observed in lung, liver and bone. Metastatic carcinoma to the skin is an uncommon occurrence, with an incidence rate of 5% or less (1, 2). The incidence of incisional skin metastasis from carcinoma cervix is extremely rare, ranging from 0.1-2% (3). Carlson *et al* (4) reported occurrence of metastatic carcinoma of the skin in 26 out of a study group of 2220 patients. We here report three cases of abdominal wall recurrences in cervical carcinoma.

Case reports

Case no. 1

A 40 year-old woman presented to us 2 months after total abdominal hysterectomy with bilateral salphingo-oopherectomy for vaginal bleeding. The surgical specimen revealed exophytic growth of 4x4 cm limited to the cervix; upon histology it was found to be well-differentiated keratinizing squamous cell carcinoma. On per-vaginum examination, the vaginal vault had a small raw area which bled on examination. Post operative CT scan showed irregular thickening of the vaginal vault with the presence of soft tissue density lesions, suggestive of residual disease. The patient underwent post-operative external beam radiotherapy (50 Gy) and intra-cavitary brachytherapy with cylinders (5Gy x 3F). Four months after completing the treatment, the patient complained of lower abdominal pain, which was non-specific in nature. On further evaluation, CT showed a 38x24x39 mm well-defined moderately enhancing nodule in the post aspect of the anterior abdominal wall in the infra-umbilical region towards the right side of the midline, also involving the underlying omental fat and causing probable infiltration of the right rectus abdominal muscle (Figure 1).

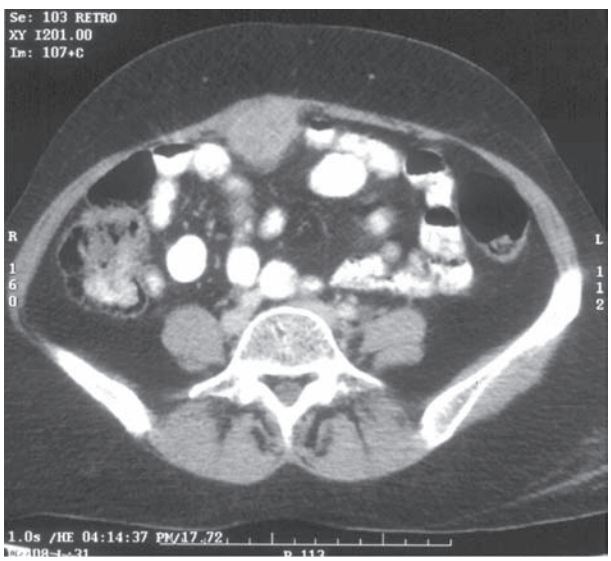

Figure 1. CT Scan showing well-defined nodule in post aspect of anterior abdominal wall towards right side of midline, also involving the underlying omental fat.

There was another nodular soft tissue thickening in the bilateral parametrial region. The spleen was enlarged with small soft tissue density nodule in the medial aspect of the lower spleen. The patient has been put on palliative chemotherapy for metastatic disease.

Case no. 2

A 36 year-old woman underwent total abdominal hysterectomy with bilateral oopherectomy for dysfunctional uterine bleeding. Her histopathological report showed infiltrating squamous cell carcinoma of cervix IIA, she was sent for adjuvant radiotherapy but did not turn up. Three months after surgery, the patient presented complaining of spotting per vaginum. On examination an ulcero-proliferative growth on the centre and left side of the vaginal vault, which bled on examination, suggestive of residual disease was proved. CT scan confirmed the finding of a mass over the vaginal vault, with no parametrial extension or lymphadenopathy. The patient underwent radiotherapy for residual disease. She was on regular follow-up with no evidence of disease for 8 months. Then she felt a small nodular mass on the anterior abdominal wall at the scar site. Malignant cells were found on the FNAC of the swelling. CT scan showed a dense soft tissue mass of size 6.3x5.6 cm in the subcutaneous planes involving the left rectal muscle (Figure 2). There was no

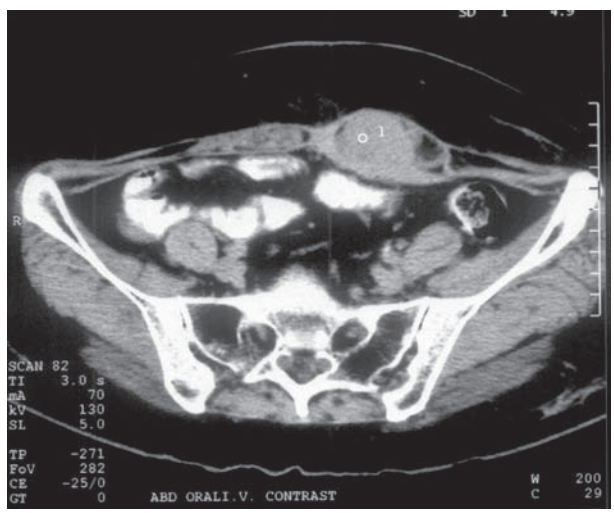

Figure 2. CT Scan showing dense soft tissue mass in the subcutaneous planes involving the left rectal muscle.

other abnormality found. The patient underwent excision of the mass by umbliectomy, and the histopathology was suggestive of metastatic sparsely keratinising squamous cell carcinoma and the margins were found to be negative. Now the patient has been on follow-up for the last year with no evidence of disease.

Case no. 3

A 45 year-old woman had subtotal hysterectomy for dysfunctional uterine bleeding at a primary health centre; incidental findings on biopsy showed squamous cell carcinoma of the cervix along with involvement of the whole thickness of the lower one third of the myometrium. After surgery, the patient reported to us for further management. Upon per vaginum examination, a growth was felt on the cervical stump, with no involvement of the vagina. She underwent radiotherapy, but 4 months after treatment she developed a small nodule on the anterior abdominal wall (Figure 3), over the previous surgical scar. FNAC of the swelling showed it to be metastatic squamous cell carcinoma. The swelling was excised along with part of the gut which was adherent to the swelling. Biopsy suggested metastatic squamous cell carcinoma and the margins were found to be free of disease. She has been on follow-up for the last six months with no evidence of disease.

Figure 3. A small nodule on the anterior abdominal wall, over the previous scar of surgery.

Discussion

Carcinoma of the uterine cervix is the commonest malignancy in women from developing countries. Approximately 30% of women with invasive carcinoma die as a result of recurrence or persistent disease (5). There are both typical and atypical manifestations associated with recurrence of the carcinoma of the uterine cervix. Typical manifestations involve the pelvis and lymph node. The lymphatic spread is usually via paracervical and parametrial lymphatic channels metastasizing to the obturator, external iliac, hypogastric, common iliac and para-aortic lymph nodes. The incidence of metastatic pelvic nodes is related to the depth of invasion and lympho-vascular invasion (6). Haematogenous dissemination occurs through the venous plexus and the paracervical vein. The most common sites of distant haematogenous metastasis are the liver, lungs and the adrenals.

Atypical manifestations are being recognized more frequently due to better treatment outreach and better imaging modalities being available (7). There have been reports of metastasis to skin and subcutaneous tissues, brain, meninges, bones, umbilicus, heart and breast as well as peritoneal carcinomatosis. Abdominal wall and scar recurrences are very rare in cervical carcinoma, though cancers of the colon, gall bladder, kidney and urinary bladder have been known to give scar recurrences after surgery (8).

There have been a total of 45 cases in the English literature to our knowledge, showing abdominal metastasis after surgery in cases of cervical carcinoma (Table 1). Of the total cases reported 24 had open surgery, 19 had laparoscopic surgery and 2 had robotic assisted. Of the 19 cases of laparoscopic surgeries, 16 had port site recurrence and both of the robotic assisted surgeries had port site recurrence. There have been similar reports in other pelvic malignancies, so there is some concern that laparoscopy could disseminate otherwise isolated pelvic disease (9). It has been suggested that the irrigation of trocar sites may decrease this risk (10). All three cases reported here underwent open surgery; two of them had scar site recurrence and one had recurrence in the abdominal wall.

The recurrence site in these 45 cases shows that the port site is the most common, in 18 cases, followed

Table 1. Abdominal metastasis after surgery in cases of cervical carcinoma.

No	Study	Age	Histological type	Stage	Surgery performed	Post-operative radiotherapy	Site of metastasis	Time of recurrence	Treatment
1.	Singh and Salwan, 1976	53	Squamous	IV	Total pelvic extentration	No	Urinary conduit stoma	12 Months	Wide excision, radiotherapy
2.	Neven *et al.* 1993	49	Squamous	IB	Abdominal radical hysterectomy	Yes	Abdominal wall	24 Months	Wide excision
3.	Copas *et al.* 1995	46	Squamous	IIA	Retroperitoneal pelvic and paraortic lymphadenectomy	Yes	Drain site	7 Months	Wide excision, radiotherapy
4	Naumann and Spencer, 1997	41	Squamous	IIIB	Laparoscopically guided placement of syed needle	Yes	Umbilical	5 Months	Wide excision
5	Kadar 1997	64	Squamous	IIB	Laparoscopic lymphadenectomy	Yes	Port	--	Wide excision
6	Kadar 1997	41	Squamous	IIB	Laparoscopic lymphadenectomy	Yes	Port	--	Wide excision
7	Wang *et al.* 1997	--	Squamous	IB	Laparoscopically assisted vaginal hysterectomy	--	Port	2 Months	--
8	Lavie *et al.* 1999	48	Adenocarcinoma	IA1	Laparoscopically assisted vaginal hysterectomy	No	Port	9 Months	Wide excision
9	Carvalho *et al.* 1999	33	Squamous	IB2	Laparoscopic lymphadenectomy	Yes	Port	1.5 Months	--
10	Lane and Tay 1999	58	Adenosquamous	IB1	Laparoscopic lymphadenectomy	Yes	Port	10 Months	Wide excision
11	Kohlberger *et al.* 2000	31	Squamous	IB	Laparoscopic radical hysterectomy	No	Suprapubic port	19 Months	Wide excision, radiotherapy
12	Doret *et al.* 2000	--	Squamous	IIB	Laparoscopic radical hysterectomy	--	Port	--	--

(continued)

Table 1. Abdominal metastasis after surgery in cases of cervical carcinoma.

S.No	Study	Age	Histological type	Stage	Surgery performed	Post-operative radiotherapy	Site of metastasis	Time of recurrence	Treatment
13	Agostini *et al.* 2003	60	Squamous	IIB	Laparoscopic lymphadenectomy	Yes	Port	8 Months	Wide excision
14	Tjalma *et al.* 2001	74	Squamous	IIIB	Laparoscopic retroperitoneal paraortic lympadenectomy	Yes	Umbilical	15 Months	Chemotherapy
15	Gregor *et al.* 2001	31	Squamous	IIB	Laparoscopic lymphadenectomy	Yes	Port	3 Months	Wide excision
16	Behtash *et al.* 2002	44	Squamous	IIA	Radical hysterectomy	Yes	Drain	9 Months	Chemotherapy, radiotherapy
17	Liro *et al.* 2002	--	Squamous	IIA	Radical hysterectomy	Yes	Abdominal wall	6 Months	Excision, chemotherapy
18	Picone *et al.* 2003	37	Adenocarcinoma	IIB	Laparoscopic ovarian transposition	Yes	Port	6 Months	Chemotherapy
19	Martínez-Palones *et al.* 2005	--	Adenocarcinoma	IIIB	Laparoscopic retroperitoneal paraortic lymphadenectomy	Yes	Umbilical	7 Months	Wide excision
20	Srivastava *et al.* 2005	35	Squamous	IIA	Radical hysterectomy	Yes	Incisional site	3.5 Years	Wide excision, chemotherapy
21	Chen *et al.* 2008	--	Squamous	--	Laparoscopic radical hysterectomy	--	Port	--	Wide excision
22	Iavazzo *et al.* 2008	24	Squamous	IIA	Radical hysterectomy	Yes	Drain	14 Months	Excision, radiotherapy
23	Zivanovic *et al.* 2008	--	Squamous	--	Laparoscopy	--	Port	--	--
24	Zivanovic *et al.* 2008	45	Squamous	--	Laparoscopy	--	Port	--	--

(continued)

Table 1. Abdominal metastasis after surgery in cases of cervical carcinoma.

S.No	Study	Age	Histological type	Stage	Surgery performed	Post-operative radiotherapy	Site of metastasis	Time of recurrence	Treatment
25	Park *et al.* 2008	45	Adenocarcinoma	IIB	Laparoscopic retroperitoneal paraortic lympadenectomy	Yes	Port	4 Months	Chemotherapy
26	Ding *et al.* 2008	45	Squamous	IB	Radical hysterectomy	Yes	Incisional	2.5 Years	Wide excision, chemotherapy, radiotherapy
27	Kim *et al.* 2008	64	Squamous	IB2	Radical hysterectomy	Yes	Abdominal wall	6 Months	Chemotherapy, radiotherapy
28	Yenen *et al.* 2009	42	Squamous	IIB	Laparoscopic retroperitoneal paraortic lympadenectomy	Yes	Port	6 Months	Wide excision, chemotherapy
29	van den Tillaart *et al.* 2010	63	Squamous	IIA	Radical hysterectomy	Yes	Abdominal wall	27 Months	Wide excision
30	van den Tillaart *et al.* 2010	29	Squamous	IIB	Radical hysterectomy	Yes	Abdominal wall	2 Months	Wide excision
31	van den Tillaart *et al.* 2010	34	Squamous	IIB	Radical hysterectomy	Yes	Abdominal wall	4 Months	Wide excision
32	van den Tillaart et al. 2010	35	Squamous	IB2	Radical hysterectomy	Yes	Abdominal wall	21 Months	Wide excision
33	van den Tillaart *et al.* 2010	35	Squamous	IB1	Radical hysterectomy	No	Abdominal wall	11 Months	Wide excision, radiotherapy
34	van den Tillaart *et al.* 2010	61	Adenocarcinoma	IB1	Radical hysterectomy	No	Abdominal wall	45 Months	Wide excision
35	van den Tillaart *et al.* 2010	65	Squamous	IB1	Radical hysterectomy	Yes	Abdominal wall	10 Months	Chemotherapy

(continued)

Table 1. Abdominal metastasis after surgery in cases of cervical carcinoma.

S.No	Study	Age	Histological type	Stage	Surgery performed	Post-operative radiotherapy	Site of metastasis	Time of recurrence	Treatment
36	van den Tillaart *et al.* 2010	41	Squamous	IB2	Radical hysterectomy	Yes	Abdominal wall	14 Months	Chemotherapy
37	van den Tillaart *et al.* 2010	44	Squamous	IB2	Radical hysterectomy	No	Abdominal wall	6 Months	Wide excision, radiotherapy
38	van den Tillaart *et al.* 2010	32	Adenocarcinoma	IB2	Radical hysterectomy	No	Abdominal wall	33 Months	Wide excision
39	van den Tillaart *et al.* 2010	26	Squamous	IB1	Radical hysterectomy	Yes	Abdominal wall	5 Months	Wide excision, radiotherapy
40	Sert 2010	60	Adenocarcinoma	IB1	Robotic-assisted radical hysterectomy	No	Port	18 Months	Wide excision, chemotherapy, radiotherapy
41	Boiles and Borowsky 2012	35	Squamous	IB2	Robotic-assisted radical hysterectomy	Yes	Port	5 Months	Wide excision
42	RSCH 2012	46	Adenocarcinoma	IB1	Radical hysterectomy	No	Incisional	3 Years	Chemotherapy, wide excision
43	Iavazzo *et al.* 2012	46	Adenocarcinoma	IB1	Radical hysterectomy	No	Abdominal wall	3 Years	Chemotherapy
44	Sugam Verma *et al.*, 2013	52	Squamous	IB	Radical hysterectomy	No	Abdominal wall	6 Months	Chemotherapy
45	Sinhasane H. and Rao S. B. 2013	68	Squamous	IIA	Radical hysterectomy	Yes	Abdominal wall	4 Years	Wide excision

by the abdominal wall in 17 cases, other sites being the umbilicus, drain site, scar site and the urinary conduit stoma. The minimum time before appearance of metastasis after surgery was 1.5 months, and the maximum 4 years; in general, incisional sites had late recurrences, the average being 3 years as compared to 12.9 months for the remainder. Of the total cases reported 35 had squamous cell carcinoma, 9 had adenocarcinoma and one had an adenosquamous variety. Twenty-nine of them underwent radiotherapy and 11 had no history of radiotherapy after surgery.

All three cases reported here underwent open surgery and had squamous cell carcinoma; two of them had scar site recurrence and one had recurrence in the abdominal wall. All of them had residual disease after surgery and needed post-operative radiotherapy. The average time of abdominal wall metastasis after surgery was 7 months in our cases.

There are two possible mechanisms that could explain the development of recurrence after surgery. First, direct implantation of tumour cells at the time of surgery and second, fibrin platelet deposits in the microcirculation of the surgical wound may have trapped circulating tumour cells. The mechanism of such entrapment of tumour cells has been reviewed by Sagarbaker *et al* (11). The lower immune status during pregnancy may also play a rôle in allowing such tumour implantation because several authors have reported episiotomy scar recurrences from cervical carcinoma.

There are no guidelines available in the literature to treat such scar recurrences, owing to the paucity of cases. The management mainly depends on the extent of the disease. Disease metastasis in organs such as the liver, lung and bone render these patients unsuitable for curative treatment. In the absence of distant metastases, patient should be treated with surgery or radiotherapy, or both.

Conclusion

As most of the typical manifestations of cervical carcinoma are well-known, some of the atypical manifestations require more vigilance and reporting of such manifestations. Abdominal wall and scar recurrences are very rare in cervical carcinoma and hence the treatment is tailored to the status of the patient.

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