Isolated muscle metastasis of cervical cancer

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Introduction

Cervical cancer is the second most common malignancy among women (Jemal et al. 2003). Local recurrent disease occurs in the pelvis and the vagina, whereas distant metastases frequently occur in the lungs and bone (Jemal et al. 2003).

Metastasis of cervical cancer to abdominal incisions, episiotomy sites, caesarean section incisions, laparoscopic port sites, drainage sites and the skin, has previously been reported by Stenson et al. (1990); Khalil et al. (1993) and Agostini et al. (2003). However, metastases to such tissues are usually components of systemic disease, with local recurrences and peritoneal carcinomatosis (Friedlander and Grogan 2002). So far, various locations of skeletal muscle involvement such as biceps, iliopsoas, deltoid, masseter, intercostal, have been described by Ferrandina et al. (2006). Isolated abdominal wall metastasis of cervical cancer is extremely rare with few case reports in the literature (Kim et al. 2008).

In this case report, the management of a patient who had recurrent cervical cancer with isolated metastasis to the skeletal muscle of the anterior abdominal wall, is presented.
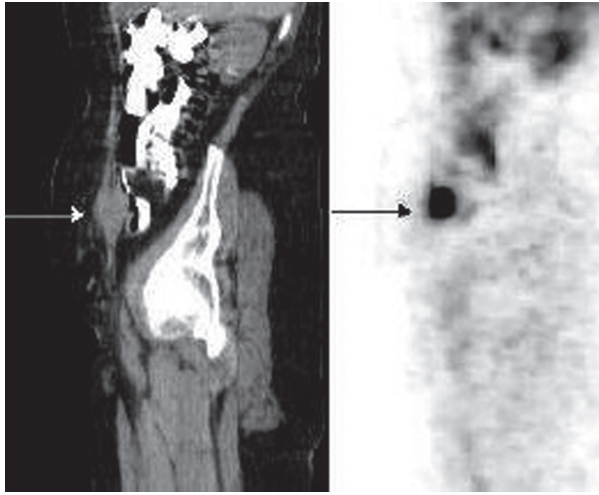
Figure 1. FDG-PET images of the metastatic lesion in the sagittal plane (arrows = lesion).

Figure 2. FDG-PET images of the metastatic lesion in the transverse plane (arrows = lesion).

Case report

A 48-year-old post-menopausal woman was admitted with a painful mass in the anterior abdominal wall, in May 2008. She had total abdominal hysterectomy and bilateral salpingo-oophorectomy for symptomatic uterine myoma in April 2005, and was found to have an incidental squamous cell carcinoma of the cervix. She had adjuvant chemoradiotherapy with cisplatin and a dose-equivalent of 5,040 cGy external beam radiotherapy in 28 fractions, which was followed by a dose-equivalent of 1,500 cGy intracavitary brachytherapy in three fractions. No recurrence was noted on routine review, until she presented with a painful mass in the anterior abdominal wall, in February 2008. Her medical history was otherwise unremarkable.

On physical examination, a 4×3 cm firm nodular tender mass situated in the left anterior abdominal wall below the level of the umbilicus, was palpated. The patient went through detailed systemic and gynaecological examinations, which were all found to be normal. Contrast-enhanced abdominopelvic computed tomography (CT) scan showed a 4.5 cm hypodense lesion within the left rectus abdominis muscle without any additional pathology. Fluorodeoxyglucose positron emission tomography (FDG-PET) scans showed a distinct hypermetabolic focus located within the left anterior abdominal wall, with standardised uptake value of 8.2 (Figures 1 and 2). The lesion was suspected to be a metastatic lesion and surgical excision was decided upon.

The previous surgical incision site was used; after the excision of the surgical scar, the peritoneal cavity was explored for the presence of ascites and peritoneal carcinomatosis and the lesion was confirmed to be the sole pathology. The lesion was approximately 6×4 cm in size and 5 cm away from the previous surgical incision line. The corresponding skin and peritoneal surface was intact. A radical surgical excision of the lesion with 5 cm clear margins was done. The subsequent abdominal wall defect was repaired with a 30×15 cm dual mesh (BARD Ltd, Crawley, UK). The postoperative period was uneventful and the patient was discharged on the 5th postoperative day. A 4 cm metastasis of squamous cell carcinoma was found on histopathological examination.

The patient was referred to an oncologist for further treatment. She received adjuvant chemotherapy with carboplatin and paclitaxel. She has shown no signs of recurrent disease over a 3-year follow-up period. Magnetic resonance imaging of the abdomen and an FDG-PET scan done in May 2011 were both found to be normal.

Discussion

Metastatic spread of cancers to skeletal muscle is uncommon with a rate of < 1%, and is usually haematogenous (Ferrandina et al. 2006). This may be explained by local defence mechanisms such as increased blood flow, local lactic acid production, protease inhibitors directed against the cellular invas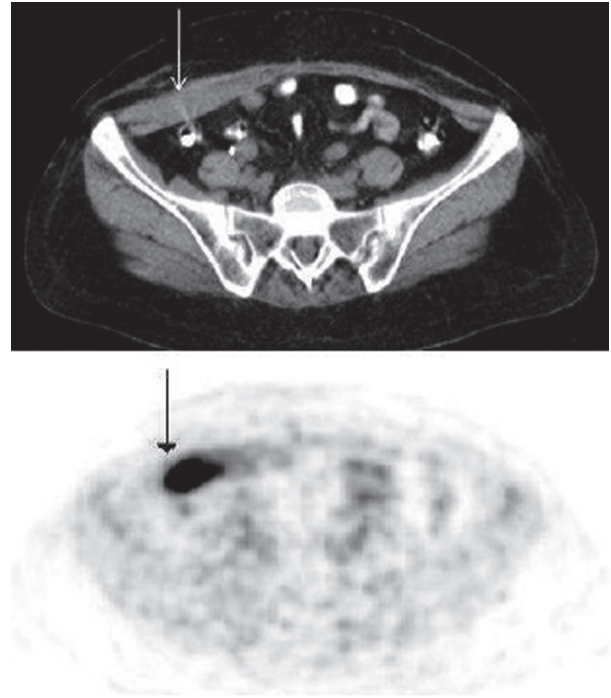ion of the basement membrane, anti-tumour activity of lymphocytes, natural killer cells and peptide factors, which are all known to be preventive against the implantation and the growth of malignant cells (Sudo et al. 1993).

Metastatic disease of skeletal muscle generally manifests itself with a palpable lump within the involved muscle, which may be either asymptomatic or symptomatic, with local signs such as pain. A careful clinical and radiological evaluation of the local signs in the follow-up period is crucial for early diagnosis. Sonography, CT and MRI are the first-line imaging methods in such cases. These not only identify the nature of the lesion but also allow the detection of other possible metastatic foci. Interventional properties of such imaging tools may also be used for sampling of suspected lesions.

Fluorodeoxyglucose positron emission tomography is a widely used imaging method in clinical oncology and was found to be superior to CT and MR in both staging of cervical cancer and detection of metastatic disease (Ferrandina et al. 2006). The latter feature is extremely important in cases that are thought to have an isolated metastasis such as the present case, since the management of the cases with isolated metastasis differs from those who have diffuse metastatic disease.

There is, as yet, no consensus for the treatment of isolated metastases of cervical cancer, due to its rarity. It should be emphasised that surgery is currently the best treatment option for isolated metastases of cervical cancer (Friedlander and Grogan 2002). Recurrent cervical cancer is generally managed by a combination of surgery, radiotherapy and chemotherapy (Tinker et al. 2005). Unresectable recurrent disease is treated by chemoradiotherapy (Tinker et al. 2005; Borgelt et al. 1981). However, the management of such cases should be individualised according to the severity and extension of the recurrent disease and general condition of the patient.

The effect of either the duration between primary treatment and the detection of metastases or surgery, on survival in patients who have recurrent cervical cancer with isolated skeletal muscle metastases, is impossible to determine, as there is insufficient data. As expected, isolated skeletal muscle metastases have a poor prognosis (Ferrandina et al. 2006).

In conclusion, recurrent cervical cancer may manifest itself with isolated skeletal muscle metastasis after primary treatment, without evidence of systemic disease. In such cases, surgical treatment may offer a good long-term outcome.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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