Case Report

Laparoscopic hysterectomy with morcellation for a suspected uterine fibroid resulting in dissemination of cervical adenocarcinoma: A case report

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Article info

Article history:
Received 29 September 2014
Accepted 8 December 2014
Available online 28 January 2015

Keywords:
Morcellation
Laparoscopy
Hysterectomy
Cervical cancer
Minimally invasive surgery

Introduction

The concept of tissue morcellation for extraction during gynecologic surgical cases has recently come under scrutiny. Several recent cases of morcellation of an undetected cancer have come into the public forefront. In fact, in April 2014 the FDA released a report discouraging the use of laparoscopic uterine power morcellation in hysterectomy and myomectomy for uterine fibroids because of the risk associated with spreading cancerous tissue if the individual has an undetected uterine sarcoma.

While there is data to suggest that morcellation of a uterine cancer and specifically a uterine sarcoma may have a negative impact on a patient’s outcome, there are no reported cases of morcellation of an undetected cervical cancer (George et al., 2014; Seidman et al., 2012; Takamizawa et al., 1999; Leibsohn et al., 1990). We report a case of a hysterectomy with morcellation for a suspected uterine fibroid resulting in the dissemination of cervical cancer throughout the abdomen and pelvis.

Case

The patient was a 46 year old gravida 0 female who presented to her primary gynecologist with a 7 month history of heavy menstrual cycles and irregular bleeding. The patient had a history of abnormal Pap smears but did not report a Pap smear being performed in the previous 7 years. Also a Pap smear was not performed preoperatively. A transvaginal ultrasound revealed uterine fibroids. The patient was subsequently taken to the operating room and underwent a total laparoscopic hysterectomy and bilateral salpingo-oophorectomy with morcellation of the uterus for tissue extraction. The pathology revealed an adenosquamous carcinoma favoring cervical origin. The tissue fragments weighed a total of 951 g and the gross measurement was 25 × 15 × 6 cm. CT scan of the chest, abdomen, and pelvis performed one week post-operatively was negative for abnormal findings. The patient was therefore referred to our institution for further evaluation. The slides were obtained for confirmation of the diagnosis.

Upon review of the slides, the patient was noted to have a moderately to poorly differentiated adenocarcinoma involving cervical and paracervical tissue, extensive perineural invasion, lymphovascular invasion, inactive endometrium, uterine leiomyomata and unremarkable ovarian and fallopian tube tissue. The pathologist commented that the uterus was received in multiple fragments, which precluded evaluation of tumor size and margin status. The tumor involved the full thickness of the sample sections (13 mm) with malignant glands involving adipose tissue, possible parametrial tissue and tissue adjacent to the areas of cautery. Although from the H&E slides the primary site could not be definitively determined, immunoperoxidase studies were supportive of endocervical primary.

Upon presentation to our center the patient approximately 6 weeks after surgery, she underwent a PET/CT. This showed FDG-avid disease superior to the vaginal cuff with extension to the right pelvic side wall and superiorly to the presacral region at the junction of the internal and external iliac vessels bilaterally. This was thought to represent residual infiltrating tumor and/or postsurgical changes. In addition, there were two punctate nodules in the upper lung lobes that were too small to characterize. An MRI of the pelvis with/without contrast showed diffuse soft tissue thickening of the vaginal cuff with infiltration of the adjacent fat and soft tissue tethering of loops of colon, and pelvic side wall and mesentry adenopathy. There was an enlarged left internal iliac lymph node measuring 1 × 2 cm, as well as enlarged lymph...
nodes in the region of the vaginal cuff, along the common iliac vessels below the bifurcation and nodularity that was seen along the IMA.

Approximately 8 weeks after surgery, the patient was initiated on concurrent cisplatin with pelvic radiation followed by vaginal cuff brachytherapy. She received a total of 6 cycles of weekly cisplatin and completed all of her treatment within 8 weeks. At the completion of the therapy a repeat MRI was performed and there was no evidence of disease. She was placed on surveillance.

Two months after the completion of therapy, the patient began to experience significant back pain and her primary doctor referred her to a local neurosurgeon. MRI of the spine showed a destructive process involving T2 with a soft tissue mass extending cephalad to caudal, which was concerning for metastatic disease. Also, signal abnormality within the transverse process of T2, T3 and T4 on the left and the pedicel of T2 on the right was concerning for metastatic disease. A whole body bone scan showed probable trauma or stress reaction involving T2 to T5 vertebral bodies and the left ischium. The patient was taken to surgery and underwent a laminectomy. The pathology from this procedure indicated metastatic adenocarcinoma in the paraspinal muscle.

The patient’s tumor rapidly progressed with involvement of the posterior chest wall measuring 10 x 5 x 10 cm and with lytic destruction of T2, T3 and T4 vertebral bodies with extension to the paraspinal region. The patient was required for hospitalization for pain management and a do not resuscitate (DNR) order was made. She received palliative radiation to the thoracic paraspinal area but ultimately developed paraparesis. She died shortly after, only 8 months after her initial hysterectomy. An autopsy showed recurrent adenocarcinoma at multiple sites including the perivaginal soft tissue, liver, dermis of mid-upper back, bilateral adrenal glands, mesentery, omentum, diaphragm, lung, abdominal wall, and ascending, descending and sigmoid colon.

Discussion

Laparoscopic surgery has become increasingly more common in the treatment of gynecologic conditions because of the improved outcomes associated with minimally invasive procedures as compared to laparotomy (Soliman and et al, n.d; Frumovitz et al., 2007; Boggess et al., 2008; Advincula et al., 2007). Tissue extraction can be a limitation if a large specimen needs to be removed from a small incision (Hoffman et al., 1994). As a result, alternative methods of removing tissue through a trochar site or the vagina have been developed. Laparoscopic power morcellators are medical devices that divide tissue into smaller pieces or shavings that can be more easily removed though a laparoscopic incision or the vagina. There is a potential for some of the small pieces of tissue to be distributed throughout the abdomen and pelvis. Dissemination of both benign and malignant conditions has been described (George et al., 2014; Sepilian and Della, 2003; Donnez et al., 2007).

Given this risk, pre-surgical screening for malignancy is particularly important. While most of the literature has focused on the preoperative detection of uterine malignancies including sarcomas, there are clear guidelines on the early detection and prevention of cervical cancer. Current recommendations from the US Preventive Services Task Force on cervical cancer screening include (George et al., 2014) that one should begin to screen at 21 with cervical cytology (Pap smear) and subsequently every 3 years assuming no evidence of disease and (Seidman et al., 2012) for women between 30 and 65 co-testing for HPV is also recommended (Whitlock et al., 2011). Since the development of cervical cancer is a stepwise process that can often take 10 to 20 years, the cellular changes can be detected earlier and intervention can occur prior to significant disease forming. It is important to note that early atypical cells seen on cytology do not always result in cancer even if untreated (Plummer et al., 2007).

In the case presented, the patient underwent cytology 7 years prior to hysterectomy and reportedly had abnormal cytology. However, she did not receive any treatment or follow-up screening prior to her hysterectomy. A Pap smear was indicated in this patient before her operation. While there are clearly several factors that may have contributed to this patient’s poor outcome, morcellation of her primary tumor within the abdominal cavity is certainly a concern. Both at the time of surgery and imaging one week after surgery, there was no evidence of metastatic disease. She subsequently developed disseminated cervical cancer throughout the pelvis, abdomen, spinal area and lungs just a few months after her initial operation. The extent and speed of her progression is uncommon for cervical cancer and may have been a consequence of morcellation of her tumor.

In conclusion, this is one of the first reported cases of an undetected cervical cancer morcellated at the time of surgery for uterine fibroids resulting in wide dissemination of disease and a poor outcome. This case highlights the importance of cervical cancer screening prior to surgery and in particular when morcellation is being considered.

Conflict of interest statement

The authors have nothing to disclose.

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