

Type I endometrial cancer after chemoradiation therapy for carcinoma of the cervix: a case report

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ABSTRACT

Standard treatment for cervical cancer has been radiation and chemotherapy. Ionizing radiation has been associated with damage to normal tissues included in the radiation field. Post-radiation uterine cancers are characterized by high stage, high grade, and a preponderance of type II histologic subtypes. We report a case of type I endometrioid adenocarcinoma diagnosed 19 years after definitive chemoradiation for cervical cancer.

Keywords: Postradiation Endometrial Adenocarcinoma; Type I Endometrioid Adenocarcinoma; Pelvic Radiation

1. INTRODUCTION

The standard treatment for locoregionally advanced cervical cancer includes radiation and chemotherapy. A number of studies have suggested that ionizing radiation causes damage to normal tissues included in the radiation field [1-13]. Long-term investigations of cervical cancer patients have revealed an increased rate of a variety of second cancers [1]. Although the risk of cancer of the uterus has not been shown to increase after pelvic radiation, post-radiation endometrial cancers have poorer prognosis than those that are spontaneous [1,2]. Post-radiation uterine cancers are characterized by high stage, high grade, and a preponderance of type II histologic subtypes [1,2]. We report a case of type I endometrioid adenocarcinoma diagnosed 19 years after definitive chemoradiation for cervical cancer.

2. CASE

K. H. is an obese, diabetic 59 years old G4P4 with a remote history of cervical cancer. She was diagnosed with stage IIIB squamous cell carcinoma of the cervix in 1992, treated with chemoradiation on the BuDR sensitizer protocol, receiving a total of 8020 cGy. In 2004, she was diagnosed with Stage I moderately differentiated in-

filtrating ductal carcinoma of the left breast, treated with lumpectomy followed with radiation therapy and aromatase inhibitors. In the same year, she was diagnosed with basal cell carcinoma of the face, treated with wide local excision alone. In late 2010, the patient presented with symptoms of diarrhea. Surveillance CT scans revealed of a small amount of fluid in her endometrial canal, PET scan showed increased activity in the intrauterine canal (see **Figure 1**), and MRI was suspicious for intrauterine thickening. Complete obliteration of her upper vagina with a vaginal depth of 3 cm precluded endometrial biopsy or adequate examination. The patient underwent outpatient laparoscopic supracervical hysterectomy for histologic diagnosis of the endometrium. Pathology revealed grade 2 endometrioid adenocarcinoma, invading 6 of 15 mm of the myometrium, with positive washings. The patient then underwent staging to remove her ovaries, tubes, pelvic and para-aortic lymph nodes, and omentum. The decision was made to leave the cervix in-situ due to the high risk of permanent damage to the urogenital tract. There was no gross evidence of disease intraoperatively;

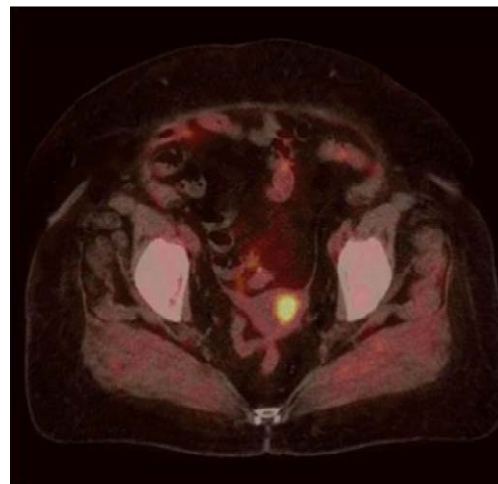


Figure 1. Pet scan showing increased attenuation in the endometrial canal.

pathology was negative, with the exception of microscopic metastases to the omentum. She is currently undergoing a planned 6 cycles of platinum and taxane based chemotherapy.

3. CONCLUSIONS

The risk of uterine cancer after radiation for cervical cancer is not increased, compared to that of unirradiated populations [1,3]. The estimated incidence of post-radiation uterine cancer is 0.5% - 0.8% [4]. International studies [6,11-13] have reported a high number of combined (type I and II) endometrial cancers. In the largest study of post radiation endometrial cancer, 308 cases of endometrioid and endometrioid cancer were reported over 40 years [1]. Of the 147 cases described in the US literature, however, the vast majority were of non-endometrioid histologic subtypes. Only 60 cases of endometrioid adenocarcinoma of the uterus are reported, many of which are grade 3 [2,4]. Although a large number of studies have demonstrated that radiotherapy can lead to secondary cancers [2-13], it appears that well or moderately differentiated endometrioid adenocarcinoma is exceedingly rare after pelvic radiation for cervical cancer. Diagnosis of radiation-associated endometrial cancer varies from sporadic cancers, which are most often diagnosed by abnormal vaginal bleeding. Cervical stenosis and obliteration of the upper vagina due to radiation damage may prevent vaginal bleeding. Evaluation after abnormal imaging can be accomplished with endometrial curettage, ultrasound guided aspiration, or hysterectomy. Differences in diagnosis are associated with significant delays of diagnosis, contributing to the poorer prognosis associated with post-radiation endometrial cancer. Advanced stage and aggressive histology of most uterine tumors after radiation for cervical cancer may require more aggressive surgical staging and adjuvant treatment than sporadic endometrial cancers. Many patients reported in case series have been surgically treated without extensive lymph node sampling or omentectomy, which may significantly affect adjuvant treatment recommendations. Routine omentectomy, pelvic and para-aortic lymphadenectomy may be both diagnostic, to guide adjuvant treatment, and therapeutic to remove microscopic disease. In the case reported here, the microscopically positive omentum changed her treatment recommendation to include cytotoxic chemotherapy. More aggressive treatment both surgically, and adjuvantly, may be considered for this particular patient population to improve prognosis. The etiology of endometrial cancer after radiation therapy for cervical cancer has been the subject of multiple reviews [1-4]. Evaluation of this patient's history and current evaluation suggests a multifactorial etiology for her disease, including traditional risk factors, genetic predisposition, and radiation effect. The patient is obese with a modera-

tely differentiated endometrioid tumor. Microscopic spread outside the uterus may be explained by trans-tubal spread after a significant delay in diagnosis due to obliteration of the upper vagina. The contribution of genetic predisposition is suggested by her personal history of 3 prior cancers. Lastly, the direct effect of ionizing radiation cannot be ignored. Pelvic radiation for cervical cancer has been implicated in the development of a variety of second cancers, often temporally distant from the radiation (5 years - 20 years). This is consistent with the 19 years gap between treatment of cervical cancer and diagnosis of uterine cancer. This case suggests endometrioid post-radiation tumors may have a complex origin.

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