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Pelvic exenteration is a highly morbid operation and remains one of the most catastrophic surgical procedures in gynecological oncology. We would like to present the case of total pelvic exenteration for vaginal cancer after radiotherapy for endometrial cancer as a secondary cancer. A 62-year-old woman, whose gravida: 3, parity: 2, body mass index: 35.9 kg/m², presented with complaints of vaginal bleeding. She had undergone a surgery because of a stage IB grade 2 endometrioid-type adenocarcinoma seventeen years previously. Following the surgery, she had external pelvic radiotherapy and brachytherapy. A palpable, solid and ulcerative mass was detected extending from the vaginal cuff area to the vestibulum vagina on the left postero-lateral wall of the vagina. The 5-cm vaginal mass was seen at vaginal examination. A punch biopsy from a pathological examination of the tumoral lesion was reported as a squamous cell carcinoma. Pelvic exenteration was performed and ileo-perineal fistula occurred after six months this surgery. In conclusion, we considered that this malignancy was a secondary malignancy induced by radiotherapy.

Keywords: Endometrial Cancer; Fistula; Radiotherapy; Pelvic Exenteration; Vaginal Cancer
1. Introduction
Pelvic exenteration is a highly morbid operation and remains one of the most potentially catastrophic surgical procedures in gynecological oncology, performed in patients with locally advanced malignancies which have been considered unresectable for a long time [1].

This is the only potential curative solution for patients with locally invasive cervical cancer, recurrences after cervical cancer or other gynecological malignancies such as endometrial cancer, vulvar or ovarian cancer which invade the other pelvic organs. Although morbidity rates in the past were as high as 40%, these values have since significantly decreased, and nowadays are mean 10%, with a 5-year survival rate of 40%–50%. Resection with a clear margin has been reported to be achieved in 75%–97% of cases, and perioperative mortality of patients undergoing exenteration as 3%–5% [2].

2. Case report
A 62-year-old female with gravida: 3, parity: 2, and body mass index: 35.9 kg/m², presented with complaints of vaginal bleeding. The patient had undergone a total abdominal hysterectomy and bilateral salpingo-oophorectomy because of stage IB grade 2 [3] endometrioid-type endometrial adenocarcinoma. Following the surgery, external pelvic radiotherapy (45 gy in total) and brachytherapy (15.5 gy in total) were applied in 2003. A solid, ulcerative mass was detected extending from the vaginal cuff area to the vestibulum vagina on the left postero-lateral wall of the vagina. The 5-cm vaginal mass was seen at vaginal examination. A punch biopsy from a pathological examination of the tumor was reported as squamous cell carcinoma. Pelvic contrast-enhanced magnetic resonance imaging and (18) F-fluorodeoxyglucose positron-emission tomography-computed tomography showed the tumoral lesion revealed no metastatic lesions. The patient underwent cystoscopy and colonoscopy, showed no tumor in the bladder and colon. Following these tests, pelvic exenteration, the ileal conduit and side to side functional bowel anastomosis surgery was performed. The operative time for the procedure was 8 hours. No major complications occurred during the surgery. Finally, the patient had two permanent stomas in the abdomen.
wall: one was a colostomy to allow feces to leave the body and the other was an ileostomy (ileal conduit urinary diversion) to drain urine. The patient stayed in the intensive care unit for 2 days. The microscopic examination pathology results of the surgical specimen were reported as “Vagina: poorly-differentiated non-keratinizing squamous cell carcinoma.” The tumor was approximately 5×4.5 cm in area, extending to the rectum submucosa with invasion of the mesorectal adipose tissue and to the bladder muscle tissue with invasion of the peripheral adipose tissue. No tumor was found in the bladder and rectum mucosa. Lymphovascular and perineural invasion was observed, and surgical margins were clear in terms of cancer. The immuno-histochemical study showed the P16 and human papilloma virus (HPV) III family probe to be negative.

After 6 months of surgery, ileal-cutaneous fistula occurred and treated with resection anastomosis (Fig. 1). Recurrence of the disease has not detected until nowadays.

Written informed consent was obtained from the patient for the publication of this case report and accompanying images.

3. Discussion
Vaginal cancers tend to be related to high-risk HPV in up to 89% of patients and occur primarily in younger women. Staging for vaginal cancer is based on clinical evaluation according to the International Federation of Gynecology and Obstetrics system [4].

One of the most destructive effects of exposure to radiotherapy is the emergence of radiation-induced malignancies. Second primary tumors may develop in patients who have been treated with radiotherapy, most of which are squamous cell carcinomas [5]. For patients with locally advanced or recurrent pelvic tumors, pelvic exenteration with or without vaginal reconstruction may be curative, and exenteration may also be considered in patients with stage IV vaginal or cervical cancer [6].

In the current case, following a hysterectomy for endometrial cancer, the patient underwent radiotherapy. This surgery was performed because of a stage IB grade 2 endometrioid-type

![Fig. 1. Photo of perineal fistula.](https://ejgo.org)
adenocarcinoma seventeen years previously. The 5-cm vaginal mass was seen in the current vaginal examination and pelvic exenteration was scheduled. After pelvic exenteration, no HPV was detected as a result of in situ hybridization examination. Because of these reasons the author considered that the case occurred as a secondary tumor after radiotherapy.

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