A CASE OF PATHOLOGIC FRACTURE OF THE PROXIMAL FEMUR RESULTING FROM METASTATIC BONE TUMOR OF OVARIAN IMMATURE TERATOMA

Tae Hyun Kim, MD1, Seung Yeon Choi, MD1, Ji Hee Sung, MD1, Chel Hun Choi, MD1, Sung Wook Seo, MD2, Duk Soo Bae, MD1
Departments of 1Obstetrics and Gynecology, 2Orthopedics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

Composing of less than 1% of all ovarian cancers, immature teratoma is a malignancy that mainly affects the young. In this report, we present the first case of pathologic fracture of the proximal femur resulting from metastatic bone tumor of ovarian immature teratoma. A 33-year-old Korean female was diagnosed as immature teratoma of stage Ia and grade 3. Eleven months following initial surgery, she had developed right thigh pain and palpable mass, which was confirmed metastasis of immature teratoma. She had her right leg broken during concurrent chemoradiation. She took mass excision, closed reduction with internal fixation and allo-bone graft followed by 6 cycles of chemotherapy and 10 times of radiotherapy. Now she is on regular follow-up and remained disease-free for 14 months.

Keywords: Bone neoplasm; Teratoma; Fractures; Spontaneous; Ovary

Ovarian immature teratoma affects mostly young women and constitutes approximately 1% of all ovarian malignancies [1]. The symptoms are often nonspecific, usually consisting of mass effect inflicting abdominal or pelvic discomfort and this tumor is rapidly progressive without treatment [1,2]. Although it was previously regarded as having a high mortality rate, the concurrent chemo-therapeutic agents, combination of bleomycin, etoposide, and cisplatin (BEP), gives rise to better survival while minimizing toxicity profile [1,3].

Distant metastasis of immature teratoma of the ovary is uncommon [4]. In this report, we present the first case of bone metastasis from immature teratoma of the ovary followed by pathologic fracture.

Case Report

A 33-year-old female was diagnosed as ovarian immature teratoma with stage Ia, grade 3 following left ovarian cystectomy. She underwent staging laparotomy involving hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic lymph node dissection and appendectomy. She did not receive adjuvant chemotherapy. Seven months following staging surgery, the patient revisited with complaints of right thigh pain and 4 × 3 cm sized palpable mass. The mass was diagnosed as metastatic immature teratoma of the ovary by imaging study and incisional biopsy (Figs. 1, 2). At this point, she was referred to Samsung Medical Center. She complaints of right thigh pain and initial workup was done at the Department of Orthopedics. It revealed about 20 cm sized...
Fig. 1. Initial imaging studies. (A) Plain radiography of the thigh. No pathologic fracture. (B) Magnetic resonance imaging finding. 20×5×4 cm sized solid mass in proximal to mid portion of right femur involving soft-tissue mass and vastus intermedius muscle.

Fig. 2. The pathologic finding of immature teratoma, incisonal biopsy at right thigh palpable mass. (A) Gandular, stromal and muscular differentiations was noted (H&E, ×40). (B) Multifocal malignant transforming area (H&E, ×100). (C, D) Mesenchymal and epithelial cell shows polymorphic and hyperchromatic change with prominent nucleoli. Malignant transformation was detected (H&E, ×200).