

Primitive neuroectodermal tumor of the cervix uteri: A case report and review of literature

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Abstract

Ewing's sarcoma is a round cell malignancy of bone and soft tissue that occurs predominately in adolescents and young adults.

It is an uncommon malignancy, but is recognized as the second most prevalent primary bone tumor worldwide. Extraosseous Ewing's sarcoma is extremely rare and can affect the skin, soft tissues, or viscera. Prognostic and therapeutic features of Ewing's extraosseous tumors are similar to those of Ewing's sarcoma. A primary Ewing's sarcoma arising from the cervix is highly rare. Most of these patients presented with abnormal vaginal bleeding. We report a case of extraskeletal Ewing's sarcoma arising in the cervix in a 25-year-old woman.

Key words: Ewing's sarcoma, Neuroectodermal tumor, Cervix uteri

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Introduction

Ewing's sarcoma is a round cell malignancy of bone and soft tissue that occurs predominately in adolescents and young adults. Ewing's sarcoma and primitive peripheral neuroectodermal tumors are the same entity showing varying degrees of neuroectodermal differentiation and characterized by reciprocal translocation between chromosomes 11 and 22, t(11; 22). Extraosseous Ewing's sarcoma is extremely rare and can affect the skin, soft tissues, or viscera. Few examples of visceral ESFT have been previously described in literature. We report a case of extraskeletal Ewing's sarcoma arising in cervix in a 25-year-old woman.

Case report

A 25-year-old nulligravid woman visited her gynecologist, in Portugal, with complaints of irregular vaginal bleeding. There was no history of abdominal pain or systemic symptoms. A pelvic examination revealed hypertrophy of the cervix. A large biopsy showed an infiltration of small round cells suggesting a diagnosis of lymphoma. A pelvic CT scan revealed an anteverted uterus with cervix laterodeviated on the left; there was a mass at the postero lateral

part of the cervix measuring 4 x 3 cm and infiltrating left proximal parametria. There was no extension into vagina or adjacent organs. No lymph node enlargement was seen. Ovaries, liver, spleen, pancreas, and kidneys were normal in appearance. Tumor was classified as IIb according to the FIGO staging system. The patient received one cycle of CHOP (Cyclophosphamide, Adriamycin, Vincristine and Prednisone) conforming to the diagnosis of lymphoma and was subsequently referred to our institute.

At the admission, gynecological examination found a tumoral cervix measuring 3.5cm, ulcerated with soft consistence and infiltration of right parameter. MRI revealed a mass of cervix measuring 2.5cm without parametrial infiltration. There was no lymph node enlargement.

An anatomopathologic slides review was performed and showed malignant proliferation consisting of polyhedral cells, medium-sized with ill-defined cytoplasm. The nuclei were rounded, containing a fine chromatin with perimembrane condensation. Stroma was highly vascularized and rare territories of necrosis were observed. Multiple immunohistochemical analyses were obtained. Vimentin and CD99

were strongly positive. Synaptophysine, NSE and Mib1 were also positive. Chromogranine A, CK 22, CD45, CD20, LCA, CD3, LAM 5 and AE1 were all negative. t (11,22) translocation was researched on biopsy performed after the CHOP chemotherapy and was negative.

Our patient continued adapted chemotherapy with an association of doxorubicine (35mg/m²/d d1 and d15) and cyclophosphamide (350mg/d from d2 to d9 and d16 to d23) every 4 weeks. She has completed 4 cycles of chemotherapy. Gynecological examination revealed a periorificial budding lesion measuring 2x 2cm. MRI showed an enhancing lesion in the posterior lip of cervix. Patient underwent a conization. Anatomopathologic examination revealed an inflammatory reaction without malignant cell infiltration. A cervical brachytherapy was initiated after ovarian transposition. Our patient received 45Gy of 60-Gy planned and refused to continue the treatment. Subsequent restaging CT scans have revealed no evidence of metastatic disease, and the patient remains disease-free, without evidence of recurrence after 8 years of survey.

Discussion

Ewing's sarcoma is an uncommon malignancy, but is recognized as the second most prevalent primary bone tumor worldwide. It occurs predominantly in young adults, with a slight male predominance. It usually arises in bone and is frequently associated with soft tissue extension. Extraskelatal Ewing's sarcoma, which was described by Tefft et al. in 1969, is far less common. This primary tumor in the soft tissue can cause changes in the cortex of adjacent bone. Different locations of primary sites have been reported including trunk (32%), extremities (26%), head and neck (18%) and retroperitoneum (16%). A primary Ewing's sarcoma arising from the cervix is highly rare. Nine previous cases of primary Ewing sarcoma of the cervix were reported in the English literature [1]. The mean age was 38 years (ranged from 21 to 51). Most of patients presented with abnormal vaginal bleeding. Imaging showed generally a well circumscribed mass measuring between 5 and 7cm and was misinterpreted as cervical leiomyoma in 2 cases [1, 2]. Therefore, confirmation of the diagnosis

of these tumors is fundamental. Morphologic, prognostic and therapeutic features of Ewing's extraosseous tumors are similar to those of Ewing's sarcoma. Typical histologic features include sheets of monomorphic round cells with small hyperchromatic nuclei, inconspicuous nuclei, and scant cytoplasm. Immunohistochemical staining positive for MIC-2 marker, neuron-specific enolase, S-100 protein, and glycogen, as well as negative for epithelial membrane antigen, leukocyte common antigen, cytokeratin, vimentine, desmin, , myoglobin, and glial fibrillary acidic protein are indicative of ewing's sarcoma [3]. A common genetic translocation involving chromosome 22: t (11; 22) (q24; q12) occurs in approximately 85% of cases. The overall percentage of survival at 5 years of PNET patients doesn't exceed 20 – 30%. Moreover, it had been suggested that adults with Ewing's sarcoma had a less favorable outcome than children [4]. An appropriate management of these tumors is necessary to improve the prognosis. Snijders-Keilholz et al. [3] have recently advocated a similar management approach to cervical PNET as to their osseous counterparts: induction chemotherapy, surgery, and consolidation chemotherapy. When resectable, the surgical excision must be wide, in accordance with classic oncologic principles. Standard chemotherapy treatment options include conventional doses of doxorubicin plus cyclophosphamide and vincristine with or without actinomycin D.

Conclusion

In summary, we experienced a primary cervix ES/ PNET. This case report shows that the differential diagnosis of this entity can be very difficult. Treatment of cervix PNET should be like skeletal Ewing's sarcoma. Discussion in multidisciplinary tumor working groups is indeed warranted.

References

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