



## Primary Ewing sarcoma of lungs with mediastinal metastasis, a rare type of metastatic lung neoplasm

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### Background:

The Ewing sarcoma family of neoplasms comprises different types of tumors which share mutual neuroectodermal histology and pathogenesis. Although skeletal Ewing sarcoma is the second most common primary bone tumor, extraosseous Ewing sarcoma remains extremely rare. In this case report, we presented a young female patient with metastatic Ewing sarcoma of the lungs.

### Case presentation:

A young female patient was diagnosed with primary Ewing sarcoma of the left lung at the age of 12. Initial therapy included a left-sided lobectomy followed by adjuvant chemoradiotherapy. Further PET CT investigations showed signs of disease in remission. One year after the last chemotherapy treatment by Euro Ewing protocol, MRI and PET CT investigations showed the disease in progression. PET CT showed increased metabolic activity in the right upper lobe of the lungs. Mediastinal lymphadenopathy of the left hilus was confirmed and metastatic disease was suspected. Accordingly, an endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) was performed. The results of cytological analysis of 3 samples obtained from left hilar lymph nodes (region 10L) confirmed metastasis of the Ewing sarcoma. Additional chemoradiotherapy was performed, but with limited effect. A year and a half after the metastatic disease was confirmed, the disease progressed and oral metastases were found.

### Conclusion:

Since there have been very few or no studies on the treatment of metastatic primary extraskeletal Ewing sarcoma, there has been no international consensus on how to treat Ewing sarcoma family neoplasms. Some studies claim a similar treatment for almost all types of Ewing sarcomas. Furthermore, there are studies which showed a more significant role of surgery in the extraskeletal group of Ewing sarcomas. Lastly, metastatic and inoperable Ewing sarcomas have a limited spectrum of action since most patients have already taken up all treatment possibilities.

### Keywords:

endoscopic ultrasound-guided fine needle aspiration; extraosseous Ewing sarcoma; lung cancer