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Case Report: Primary Embryonal Carcinoma of the Anterior Mediastinum

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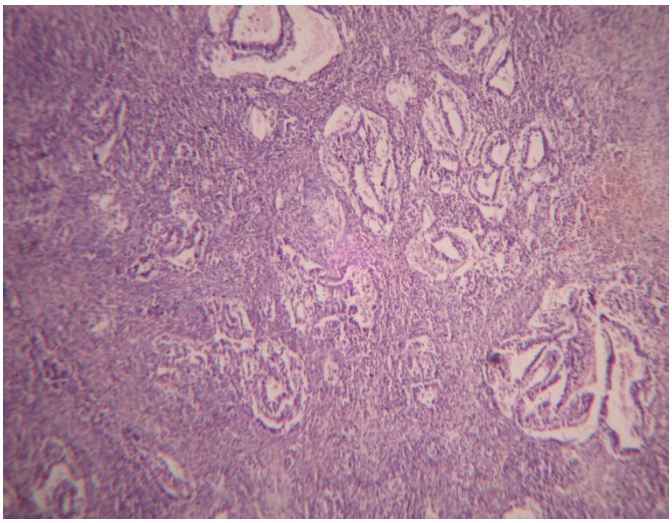
Abstract: *The anterior mediastinum is the most common extragonadal location for germ cell tumors and accounts for about 50% to 70% of such neoplasms. Embryonal cell carcinomas are one of the rarest forms and account for less than 2%. We present the case of a 19-year-old male who was found to have a primary embryonal cell carcinoma of the anterior mediastinum. This case illustrates the subtle complaints that these patients present with, some of the problems and decisions that go into making the diagnosis, and the response to the appropriate therapy. The following discussion takes a look at the variety of germ cell tumors, the vast differential of an anterior mediastinal mass, the workup of such a mass, and the various treatments and outcomes of extragonadal germ cell tumors*

I. Case Report:

19-year-old man presented with shortness of breath. He had been losing weight for several months. A chest radiograph revealed a large anterior mediastinal mass . A CT scan showed that the mass extended in the anterior mediastinum from the manubrium to the diaphragm.The mass was heterogeneous but solid, encasing and displacing the great vessels and narrowing the main bronchi, especially on the right . Echocardiography showed a large pericardial effusion with cardiac tamponade. Peri-cardiocentesis and drainage were performed. After the patient's condition had stabilized, an open biopsy of the mediastinal mass was performed. Microscopy showed a solid neoplasm with a glandular architecture,consisting of highly atypical cells with a moderate amount of eosinophilic cytoplasm and large, round nuclei with prominent nudeoli. The final pathologic diagnosis was embryonal carcinoma, primary to the anterior mediastinum.



II. Discussion:

Germ cell tumors primary to extragonadal sites such as the anterior mediastinum are believed to represent malignant degeneration of germinal elements distributed to these sites during embryogenesis **[** 1*]*. All histologic types of germ cell tumors have been described as primary anterior mediastinal tumors, including teratomas, seminomas, and nonseminomatous germ cell tumors (yolk sac tumor, embryonal carcinoma, choriocarcinoma); the least cornmon of these is embryonal carcinoma [2]. The histologic features and the demographic and histologic distributions of these extragonadal tumors are similar to those of tumors primary to the gonads, but extragonadal tumors do not represent metastases [1-3]. Most patients are men between the age of 20 to 50 ,who have no previous history of testicular neoplasms or tumors elsewhere. Presenting symptoms may be systemic (weight loss, fever, chills) or more directly related to an anterior mediastinal mass (chest pain, shortness of breath, superior vena cava syndrome, postobstructive lung disease). The chest radiograph will

typically show gross widening of the anterior mediastinum by a lobulated mass [4]. CT scans or MR images will typically show a large tumor that may be heterogeneous from central hemorrhage and necrosis. The mass can be well circumscribed or have irregular margins but a lobular contour suggests malignancy.Invasion of mediastinal structures such as the great vessels or central airways may occur, and invasion of the pleura or pericardium may be suggested by the presence of pleural or pericardial effusion. Nonseminomatous malignant germ cell tumors respond to chemotherapy, but the prognosis is nonetheless poorer than that for primary gonadal tumors of the same histologic type [1-3].

III. Conclusion:

This case is presented as Embryonal cell carcinomas are one of the rarest forms of germ cell tumours that present in the mediastinum and account for less than 2%.Therefore, despite the low incidence , careful close follow-up of these patients is warranted until the diagnosis has been ruled out given the potentially devastating consequences of missing this diagnosis or prolonging the time to treatment.

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