Mixed Germ Cell Tumor Presenting as a Multifocal Mass within the Testis and Spermatic Cord

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Introduction

Testicular cancer is overall a rare malignancy seen in males, but has been on the rise in the Western world due to unknown causes. Testicular neoplasms take two major categories which are germ cell tumors (95%) and sex cord-stromal tumors. Neoplasms arising in the testis are almost always of germinal origin and are divided into two main groups based on the new World Health Organization (WHO) 2005 classification: tumors occurring predominately in prepubertal patients, not derived from germ cell neoplasia in situ (GCNIS); and tumors derived from GCNIS (GCNIS precursors) or a medulloblastoma of the posterior mediastinum (adult medulloblastoma) (GCNIS-type germ cell neoplasm (GCNIS)), which is the most widely accepted precursor lesion of adult malignant testicular germ cell tumors. Germ cell tumors typically are seen in the 35 to 44-year-old age group and account for less than 1% of all malignancies in men.1 Typically, germ cell tumors are capable of rapid and widespread dissemination due to their aggressive nature, but with proper treatment most can be cured.1 Testicular germ cell tumors are very sensitive to chemotherapy and considered one of the most curable solid tissue tumors. Chemotherapy is routinely given to patients with metastatic seminomas or NSGCT and patients with serum tumor markers that remain elevated after orchidectomy.1 Mixed germ cell tumor accounts for about 6% of all testicular tumors and common combinations include teratoma, embryonal carcinoma and yolk sac tumor; seminoma with embryonal carcinoma; and embryonal carcinoma with teratoma.1

Methods and Materials

Cassettes submitted by the Pathologists’ Assistants for microscopic examination included the following: 1. germ cell tumor markers; 2. three representative sections of mass number one with one section including the epididymis; 6. two sections of mass number one extending toward mass number two; 7. two sections of mass number two; 8. two sections of mass number two extending toward mass number one; 9. one section of unremarkable testis with underlying epididymis; 10. an additional cross section of the spermatic cord.

In this case the most important diagnostic factor to submit all areas of the mass that are grossly different.2 The most important prognostic factor the Pathologist’s Assistant can contribute to is to ensure that sufficient contours of the tumor are submitted. At the absolute minimum, one cassette should be submitted per one per tumor.2 The extent of invasion and relationship of the tumor to the attached organs and structures is also extremely important for the Pathologist’s Assistant to mention in their gross description.

Figures and Tables

Seminoma

Results

Figure 3. Seminoma of the left testis with a homogeneous pattern and uniformity of size and shape. A few areas of necrosis and hemorrhage are present. The tumor cells are large and polygonal, with prominent nucleoli and abundant eosinophilic cytoplasm. Mitotic figures are rare. The tumor cells are arranged in a honeycomb pattern, separated by a delicate stromal network. Immunohistochemical stains of the tumor cells are positive for CD117 and CD30, consistent with the diagnosis of seminoma.

Discussion

The patient is a 65-year-old male who presented with a testicular mass. The mass was resected and histologically confirmed to be a seminoma. The patient is currently undergoing chemotherapy and has shown a complete response.

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References