Malignant Sertoli cell testicular tumor in the older male

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ABSTRACT

Background: Testicular tumors are classified as germ cell or non-germ cell tumors. Sertoli cell tumors are rare.

Objective: The case of an older male patient presenting with testicular tumor of rare histological classification is described.

Materials and Methods: This patient is a 53-year-old man who presented with an enlarged left testicle accompanied with intermittent pain and weight loss. Physical examination revealed a 5 x 5 cm left testicle that was painful when palpated and painful adenopathy in both mammary glands. Testicular ultrasound, computed axial tomography and chest X-ray were ordered. Results: The patient underwent surgery and diagnostic histopathological study reported Sertoli cell testicular tumor.

Discussion: The frequency of Sertoli cell tumors is low and they present in pediatric patients and in patients from 20 to 40 years old. There are only a few cases of this disease reported in the literature.

Conclusion: Sertoli cell tumors are rare. Immunohistochemical study is very useful in their identification allowing the patient to receive adequate and opportune treatment.

Key words: Testicular tumor, Sertoli cells, immunohistochemical study

RESUMEN

Antecedentes: Los tumores testiculares se clasifican en germinales y no germinales. Los de células de Sertoli son una entidad poco frecuente.

Objetivo: Presentación de un tumor testicular en paciente de edad madura y estirpe histológica poco frecuente.

Material y métodos: Paciente masculino de 53 años quien presenta aumento de tamaño de testículo izquierdo, acompañado de dolor intermitente y pérdida ponderal. A la exploración física, se encuentra un testículo izquierdo de 5 x 5 cm, doloroso a la palpación. Adicionalmente, se muestran adenopatías dolorosas en ambas glándulas mamarias. Se realizó ultrasonido testicular, tomografía computadorizada y telerradiografía de tórax.

Resultados: El paciente recibió tratamiento quirúrgico y el reporte histopatológico diagnosticó un tumor testicular de células de Sertoli.

Conclusiones: Los tumores de células de Sertoli son raros. El estudio de inmunohistoquímica es de mucha utilización para poder identificar y tratar de manera adecuada y oportuna al paciente.

Palabras clave: tumor testicular, células de Sertoli, estudio inmunohistoquímico, México.
INTRODUCTION

Testicular tumors are divided into two large groups: germ cell and non-germ cell. Among the non-germ cell lesions are the infrequent Leydig cell and Sertoli cell tumors. Sertoli cell tumors are rare and are classified into three types. Each type has a different malignant behavior and differs in its association with extragonadal processes. These tumors currently make up 0.4-1.5% of all primary testicular tumors (1,2). Due to their low frequency there are only about 100 cases reported in the literature. The three types of Sertoli cell tumors are classified histologically and clinically as classic, large cell calcifying and sclerosing tumors (1-5). The case of a malignant Sertoli cell testicular tumor in an older man is presented.

CASE PRESENTATION

The patient is a 53-year-old man with a medical history of 5-year exposure to insecticides and 20 years of smoking. He sought medical attention due to progressive increase in volume and pain in the left testicle, painful lumps in both nipples and non-productive cough of 4-month progression. He complained of 15 Kg weight loss over a period of 3 months, asthenia and adynamia. Physical examination showed adenopathy in both breasts, cardiac noise with no alterations and stertors in the right interscapulovertebral region. There was a palpable, fixed, non-painful 7 x 5 cm abdominal mass in the mesogastrum and left iliac fossa. Genital examination revealed an approximately 5 x 5 cm increase in volume in the left testicle that was painful when palpated. Laboratory tests reported creatinine: 1.0 mg/dl, blood urinary nitrogen (BUN): 19 mg/dl, alkaline phosphate: 371 IU/l, dehydrogenase lactate: 161 mg/dl, hemoglobin: 8.9 g/dl, hematocrit: 29%, platelets: 547,000, alpha fetoprotein: 3 IU/ml, human chorionic gonadotropin: 0 IU/ml, UA: cloudy urine, density:1.02, pH:6.5, proteins: 41 mg/dl, hemoglobin ++, leukocytes: 1-3 per field, erythrocytes: 20-30 per field and epithelial cells: 3-5 per field. Testicular ultrasound showed hypoechogetic image in the left testicle (Image 1). Axial tomography reported retrocrural adenopathy and retroperitoneal conglomerate extending toward the left iliac chain (Image 2). Chest X-ray showed images of multiple basal nodules (Image 3).

Radical orchiectomy was performed on the left 6.5 x 3 x 2 cm testicle. It weighed 90 gr and presented with 4.5 cm of whitish-gray soft necrotic tissue with reddish-yellow necrotic zones. Histopathological study showed solid nests of cells with ovoid nuclei and prominent nucleoli, frequent mitosis and abundant clear cytoplasm. Plasmatic cell and mature lymphocyte aggregates were found among the cell nests as well as thick collagen bands in some zones. Final histopathological diagnosis was malignant testicular stromal Sertoli cell tumor (4.5 cm), multifocal necrosis and invasion of the epididymis, tunica albuginea and blood and lymphatic vessels. Sperm cord invasion was not observed. Inhibin, cytokeratin 8-18, calretinin and vimentin were all positive in the immunohistochemical studies (Image 4).

DISCUSSION

Sertoli cell tumors present in pre- and post-pubescent age patients. The classic variety presents more frequently in patients with a mean age of 40 years and in pediatric patients. Hormonal activity manifested as gynecomastia and accelerated bone growth can be observed in up to 25% of patients. Classic variety can be malignant and produce metastasis in the lung, bone and lymph nodes in up to 20% of patients (6). Sclerosing type tumors were first described in 1991 (7). Mean age for this type of tumor is 35 years. It does not present with hormonal activity, it is unilateral and on rare occasions is multifocal. Its prognosis is good and it is a benign tumor (6,8). The calcifying type tumor is more aggressive and up to 35% of cases can be associated with Carney, Peutz-Jeghers and Bourneville syndromes. There are two groups of calcifying tumors. Early presentation tumors (mean patient age 17 years) that are frequently bilateral and multifocal and present with hormonal activity, form one group. Tumors appearing at approximately 40 years of age have different characteristics from those of early age tumors and they have a higher malignization risk (6,9,10). In the present case, tumor presented in the patient at 53 years of age, which is outside the common age range.

As was true with our patient, alpha-fetoprotein and chorionic gonadotropin tumor markers are usually negative. Sexual hormone values are of little use and are ordered postoperatively as control in potentially malignant tumors.

Ultrasound is a useful tool for identifying Sertoli cell tumors because mixed echogenicity can be observed. However, it is difficult to differentiate these tumors from other testicular tumors. In the pathological analysis they are observed as whitish yellow regular edged neoplasms. Sclerosing tumors can measure from 0.4-4 cm (7). Histologically, Sertoli cell tumors can be observed as tubules or cords lacking trabecular or diffuse growth pattern (1). Cytoplasm is moderate in quantity, pale and eosinophilic with interior vacuoles. In the present study thick collagen bands were observed in some areas with sclerosing aspects. Metastasis of these
Our patient presented with clinical data suggestive of pulmonary pathology which was confirmed by chest X-ray. The presence of metastasis is the best malignancy indicator and has only been reported in 10-12% of all Sertoli cell testicular tumors (1). Another useful tip for differentiating Sertoli cell subtypes is cytokeratin immunohistochemistry study expression. Cytokeratins are proteins found in epithelial cells and in tumors. Sertoli cell tumors present positive cytokeratin immunohistochemical stains. Normal Sertoli cells are negative for cytokeratin and positive for vimentin (7).

Immunohistochemical study is extremely useful because it can differentiate Sertoli cell tumor from lymphoma. We confirmed diagnosis in our patient through positive cytokeratin 8-18, inhibin and vimentin in the immunohistochemical study.

**CONCLUSIONS**

Sertoli cell testicular tumors are rare and very few cases have been reported in the medical literature. Their different histopathological patterns are classified into sub-groups. It is important to be aware of tumor histopathological characteristics in order to determine its clinical behavior. Immunohistochemical study is very useful in differentiating these tumors from other neoplastic processes. Sertoli cell tumors that have metastasized to other organs are malignant and have a high mortality rate. Being familiar with histopathological findings and their adequate classification is very important for opportune and adequate tumor management, thus reducing morbidity and mortality as much as possible.

**BIBLIOGRAPHY**