CLINICAL CASE

Leydig cell tumor in 86-year-old man

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ABSTRACT

Leydig cell testicular tumors are derived from non-germ cells and have a very low incidence rate that is estimated at 2 cases per 100,000 inhabitants, representing 1% of testicular tumors. These tumors appear between the ages of 20-60 years in 80% of cases.

The case presented here is an 86-year-old man with increase in volume of the right testis and orchialgia of approximately 1-year progression. Tumor was detected in right testis by means of ultrasound. Physical examination did not reveal clinical signs of endocrine involvement. Lactate dehydrogenase, alpha-fetoprotein and chorionic gonadotropin beta subunit were in normal ranges. Abdominal computed tomography and chest x-ray showed no abnormalities. After right radical orchiectomy was carried out, non-malignant Leydig cell tumor was reported. The appearance of tumor in a patient of such advanced age was striking given that there are very few such cases reported in the literature.

Key words: Leydig cells, testicular tumor, virilization, feminization, Mexico.

RESUMEN

Los tumores testiculares de células de Leydig son unas neoplasias derivadas de células no germinales con una incidencia muy baja, que se estima en dos casos por 100 000 habitantes, representado el 1% de todos los tumores testiculares. Las edades de aparición varían entre los 20 a 60 años en el 80% de los casos.

Presentamos el caso de un paciente masculino de 86 años con aumento de volumen del testículo derecho y orquialgia de aproximadamente un año. Mediante ultrasonido se le detectó un tumor en el testículo derecho. En el examen físico no había signos clínicos de afección endocrina. La deshidrogenasa láctica, alfafetoproteína y fracción beta de gonadotrofina coriónica, estaban en rangos normales. Se le realizó una tomografía computarizada abdominal y tele de tórax sin evidenciarse anomalías. Tras realizársele una orquiectomía radical derecha, se reportó una neoplasia de células de Leydig sin datos de malignidad. En el presente caso destaca la edad avanzada de aparición del tumor, ya que existen pocos casos en la bibliografía.

Palabras clave: Células Leydig, Tumor testicular, virilización, feminización, México.

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INTRODUCTION

Leydig cell testicular tumors are a rare neoplasia making up only 1% of all testicular tumors. Their etiology is unknown and they are usually diagnosed in patients between the ages of 20 and 60 years. However, they have been known to occur in prepubescent patients. [1-3]

Some of their clinical manifestations are varying endocrine complaints that, depending on the age group, include signs of virilization or feminization, infertility, or sexual dysfunction. It is estimated that 10% of these tumors possess malignancy criteria and such cases have only been reported in adults.[1]

CASE PRESENTATION

Patient is an 86-year-old man with a history of diabetes mellitus of long progression and chronic venous insufficiency with recent symptoms of thrombophlebitis in the left pelvic member. He sought medical attention due to an increase in volume of the right testis and mild orchialgia of approximately 2-month progression that was not associated with any other symptomatology. Patient was obese and physical examination revealed hydrocele in the right testis. No masses were palpated and palpation was painless. Left testis was normal and there was no evidence suggesting feminization or virilization. As part of evaluation protocol, testicular ultrasound was ordered that reported a 4.28 cm x 3 cm right testis and hydrocele. There was also heterogeneous echogenicity with a nodule of approximately 1.6 cm x 1.7 cm, with a hypo-echoic halo in the testicular parenchyma. Doppler ultrasound showed the presence of arterial and venous flow. Laboratory tests, complete blood count, and liver function tests were all normal. Tumor marker results were in normal range with alpha-fetoprotein 2.31 ng/mL, beta-human chorionic gonadotropin 0.8 mU/mL and lactate dehydrogenase hormone 275 U/L.

Chest x-ray and abdominal tomography showed no abnormalities.

Right radical orchiectomy was performed. Anatomopathological report described Leydig cell tumor of approximately 2.5 cm x 1.8 cm, with diffuse foci of Leydig cell hyperplasia and no data suggestive of malignancy (**Image 1**).

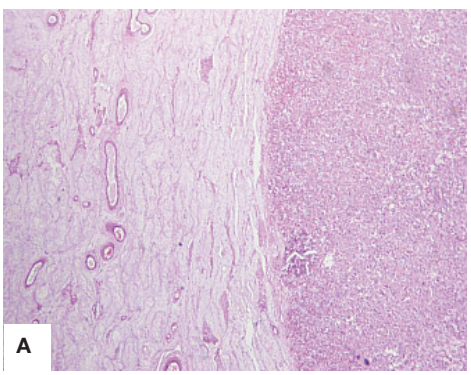
DISCUSSION

The majority of cases are diagnosed after palpable mass detection. Ultrasound is the principal diagnostic resource that usually shows well-defined hypoechoic or heterogeneous tumor with non-specific pattern.

It is estimated that in up to 30% of cases there can be endocrine manifestations or non-palpable tumor. It is important to differentiate between the types of endocrine manifestations that can present; in boys there are signs of predominant virilization (precocious puberty, penile growth, among others) and even evidence of increase in serum testosterone values. In contrast in the adult, feminization symptoms predominate and gynecomastia is the most common sign (15%). This difference in tumor behavior lies in the fact that in the adult, enzymatic conversion to estradiol takes place due to microsomal aromatase contained in Leydig cells, while in the prepubescent it is contained in Sertoli cells. [2,3]

Leydig cell tumors are considered to have low malignant potential (10%). There are certain clinical data that suggest malignancy. The presence of metastasis is the only absolute criterion. In regard to tumor size, it is known that these tumors are well-differentiated

Image 1. Surgical specimen in which well-differentiated nodule in the central region is seen.



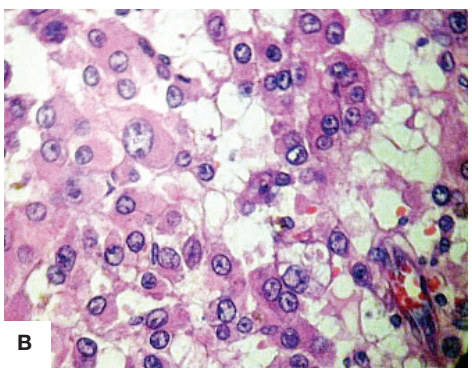


Image 2. Microscopic tumor images with no evidence of malignant elements: A) Interphase between healthy testicular parenchyma and tumor. B) Tumor Leydig cells with abundant cytoplasm and prominent nucleoli.

microscopically and that in 85% of cases do not exceed 5 cm. There is greater probability that a tumor under 2.5 cm is benign. There is greater probability of malignant progression associated with tumors arising in older patients. [1,3]

From a histopathological perspective, these tumors are composed of polygonal cells, abundant eosinophilic cytoplasm, and the presence of Rentke crystals (a pathognomonic characteristic of Leydig cells) in 30% of cases. Anatomopathological malignancy criteria are: presence of mitosis, necrosis, angiolymphatic invasion, invasion of structures outside the testis, and nuclear atypia (**Image 2**).[2,4,5]

In regard to surgical treatment, radical orchiectomy is considered to be the standard procedure. However, in the case of patients wishing to preserve their reproductive potential and endocrine function for different reasons and who do not present with all the criteria for malignancy, tumorectomy with testicular preservation can be offered to them. [6,7]

Patients whose histopathological studies show malignancy criteria have a survival prognosis of 2-3 years with poor treatment response to radiotherapy and variable treatment response to chemotherapy.[4,5]

CONCLUSIONS

Leydig cell tumors are neoplasias that have a very peculiar endocrine behavior that need to be correlated with clinical history in an effort to avoid their being under-diagnosed.

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