



## Oncology

## Adult Granulosa Cell Tumor of the Testis: A case report and review of the literature

Moussa Kabore<sup>a</sup>, Faha Ido<sup>b</sup>, Clotaire A.M.K.D Yameogo<sup>a</sup>, Abdoul Aziz Ouedraogo<sup>a</sup>,  
Brahima Kirakoya<sup>a</sup>, Fasnewinde Aristide Kabore<sup>a,\*</sup>

<sup>a</sup> Department of Urology and Andrology, University Hospital Yalgado Ouedraogo of Ouagadougou, Burkina Faso

<sup>b</sup> Department of Anatomopathology, University Hospital of Tingandogo, Burkina Faso



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## ABSTRACT

Adult Granulosa Cell Tumor of the Testis (AGCTT) is a rare sex-cord stromal tumor. About 73 cases have been previously reported in the literature. We report a case of AGCTT in a 64 years old male, located in the left testis. We performed left radical inguinal orchiectomy. A sagittal section of orchiectomy specimen showed a solid yellowish-white mass measuring 1cm of long axis. On microscopic examination, we noted a well-limited tumor proliferation of solid architecture. The proliferation was made up of cells with scant cytoplasm and incised oval nuclei in a fibrous stroma. Rare Call-Exner bodies were noted.

## Introduction

Granulosa cell tumor (GCT) is a rare sex-cord stromal tumor that more commonly occurs in the ovary.<sup>1</sup> It may also occur in the testicle. Like ovarian GCT, testicular GCT is subclassified into Adult form and juvenile form to indicate the age group in which they usually occur.<sup>2</sup> In the ovary, the adult form is more common than the juvenile form, whereas the juvenile form is more common in the testis.<sup>2</sup> We report a case of adult GCT in a 64 years old male, located in the left testis and managed in our teaching hospital. Objective was to report the first case of AGCTT described in Burkina Faso and to review the literature.

## Case presentation

A 64-year-old male presented with a painless left testicular swelling. This swelling increased progressively in size over the past 5 months. He complained of slow urinary stream and nocturia. In his past medical history we noted a well-controlled type 2 diabetes mellitus. The physical examination showed a swelling in the left hemi-scrotum with a palpable hard mass on the left testicle. The right testicle was normal. There was no gynecomastia. Ultrasonography of scrotum revealed in the left testicular two hypoechoic and homogeneous nodules measuring 10 × 8 mm and 16 × 10 mm. Preoperative serum levels of alpha-fetoprotein (1.22ng/ml), beta-hCG (0.10UI/ml), and LDH (356U/L) were within

normal ranges. On uroflowmetry the maximum flow rate was normal (16.3 ml/sec) and the voiding time was extended. The patient agreed to an orchidectomy. We performed left radical inguinal orchiectomy. The patient recovered from this procedure uneventfully.

A sagittal section of orchiectomy specimen showed a solid yellowish-white mass measuring 1cm of long axis (Fig. 1). The nodule was intracapsular. On microscopic examination, the sections produced showed a well-limited tumor proliferation of solid architecture. The tunica albuginea was free of tumor. We noted a dense tumor cell proliferation with fibrous stroma, separated from the healthy testicular parenchyma by a fibrous pseudo-capsule (Fig. 2A). We noted the formation of rare Call-Exner bodies (Fig. 2B). The proliferation was made up of cells with scant cytoplasm with incised oval nuclei in a fibrous stroma (Fig. 2C). Mitotic figures were observed. There was no necrosis, hemorrhage, or lymphovascular invasion.

The abdominal and thoracic Computed Tomography did not reveal any metastases. So the tumor was classified pT1N0M0.

Written informed consent has been provided by the patient to have the case details and any accompanying images published.

## Discussion

Testicular GCT is a rare testicular tumor firstly described in 1952 by Laskowski et al.<sup>3</sup> A recent systematic review of the literature by Grogg

\* Corresponding author.

E-mail addresses: [kaborem391@yahoo.fr](mailto:kaborem391@yahoo.fr) (M. Kabore), [idofranck@yahoo.fr](mailto:idofranck@yahoo.fr) (F. Ido), [yameogoclotaire@yahoo.fr](mailto:yameogoclotaire@yahoo.fr) (C.A.M.K.D Yameogo), [oaziz\\_84@yahoo.fr](mailto:oaziz_84@yahoo.fr) (A.A. Ouedraogo), [kobrahi@yahoo.fr](mailto:kobrahi@yahoo.fr) (B. Kirakoya), [kaborefamd@icloud.com](mailto:kaborefamd@icloud.com) (F.A. Kabore).

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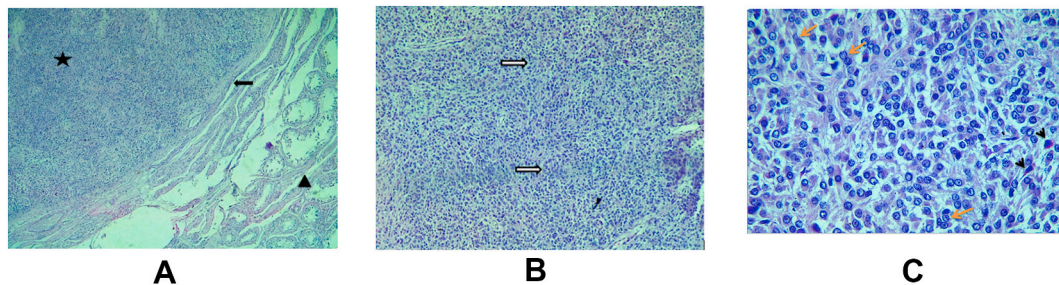
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**Fig. 1.** Orchietomy specimen: Sagittal section of the testis showing a solide yellowish-white nodule measuring 1 cm of long axis (black star).



**Fig. 2.** (A) (HE Gx10): Densely cellular tumor proliferation with fibrous stroma (black star), separated from the healthy testicular parenchyma (black triangle) by a fibrous pseudo-capsule (black arrow). (B) (HE Gx20): Densely cellular tumor proliferation made of cells with a scant cytoplasm in a fibrous stroma. The formation of rare Call-Exner bodies (arrows). (C) (HE Gx40): Proliferation of cells with sparse cytoplasm and oval incised nuclei (yellow arrows). Mitotic figures can be observed (black arrowheads). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

et al.<sup>3</sup> has identified 239 cases of testicular GCT. This is the latest systematic review on the subject. In this review, the adult type accounted for 31% versus 69% for the juvenile type, confirming that Adult testicular GCT is less frequent than Juvenile testicular GCT. The juvenile type occurs commonly in children in the first 6 months but may rarely occur in adults.<sup>2</sup> In adult-type the mean age at diagnosis is 44 years.<sup>2</sup> Our patient was 64 years old.

Clinically, painless scrotal mass (46%) and testicular enlargement (42%) are the two main signs. Gynecomastia may be noted in 10% of the adult type.<sup>3</sup> Our patient did not present gynecomastia. Commonly, testicular GCT appears as a hypoechoic lesion on testicular ultrasound.<sup>4</sup> In our patient, testicular ultrasound revealed in the left testicular two hypoechoic and homogeneous nodules.

The distinction between the adult and juvenile types depends on the histological characteristics of the tumor. The presence of Call-Exner bodies and/or coffee bean nuclei in adult type allows to differentiate it from juvenile type.<sup>4</sup> In our patient, the presence of Call-Exner bodies

allowed us to make the diagnosis of Adult testicular GCT. However some haematopoietic cancers may contain focal coffee bean nuclear characteristics. The presence of leukocyte common antigen (LCA, CD45) in haematopoietic cancers makes the difference.<sup>4</sup>

Immunohistochemistry may be used in doubtful cases to confirm the diagnosis.<sup>4</sup> In that case, testicular GCT is positive for inhibin, vimentin and calretinin<sup>5</sup>. In our patient, we didn't perform immunohistochemistry because it is not available in our context. Nevertheless we may affirm the diagnosis of Adult testicular GCT on the basis of anatomopathological findings.

Prognostically, juvenile testicular GCT are usually benign while adult type has metastatic potential.<sup>5</sup> Risk factors for metastasis have been identified: larger tumor size, presence of angiolymphatic invasion and presence of gynecomastia.<sup>3</sup> None of these factors have been found in our patient. Indeed, the CT scan did not reveal any secondary localization. So we can say that the prognosis is good for our patient.

## Conclusion

This case is the first one of AGCTT reported in Burkina Faso. Anatomopathological diagnosis is not always easy, often requiring immunohistochemical confirmation. So it is essential to have immunohistochemistry in our work context. The metastatic potential of

the adult form dictates a long-term follow-up.

## Declaration of competing interest

The authors declare that they have no conflicts of interest.

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