

Radiology Case Reports

Volume 3, Issue 3, 2008

Sonographic Features of an Adult Granulosa Cell Tumor of the Testis

Abhishek Mitra, MBBS, Victor Palit, FRCS, Rabi Paes, FRCR, and Michael Ferro, FRCS

A 25-year-old man presented with epididymoorchitis. Sonography revealed a 5 mm hypoechoic lesion with scattered foci of high level echoes and an area of calcification in the upper pole of the left testicle close to the hilum. Growth and pronounced neovascularity was demonstrated a subsequent scan. An orchidectomy was performed and histological studies revealed a granulosa cell tumour of the testicle. Testicular granulosa cell tumors are extremely rare. Comparing the previously published findings to our case, we suggest that common sonographic features of testicular granulosa cell tumors include a hypoechoegenic lesion with hyperechoic and calcified foci, sharply defined edge, and internal vascularity.

Introduction

A granulosa cell tumour is a type of sex cord stromal tumour, which is derived from non-germ cell elements [1]. It is very rare in the testis, although it is very common in the ovary. While it is acknowledged as a slow-growing tumour, it has the potential for distant and late metastases [2,8]. To date, there have been about 24

published reports in the English literature; most of these have emphasized the histological findings, which include cell characteristics as well as immunological studies. In our report, we focus on the sonographic features.

Case Report

A 25-year-old man presented to his general practitioner with a two-week history of pain in the testicles, more on the left than on the right. The pain was intermittent and associated with dysuria. On examination, he had generalized swelling and tenderness of both testicles and a clear urethral discharge. He also had palpable left inguinal lymph nodes. He was otherwise fit and well. He was treated initially as a case of epididymoorchitis and, when reviewed two weeks later, stated that his pain and discomfort had settled. Examination was normal. The tumour markers, which included serum levels of alpha-fetoprotein, human chorionic gonado-

Citation: Mitra A, Palit V, Paes R, Ferro M. Sonographic features of an adult granulosa cell tumor of the testis. *Radiology Case Reports*. [Online] 2008;3:188.

Copyright: © 2008 The Authors. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs 2.5 License, which permits reproduction and distribution, provided the original work is properly cited. Commercial use and derivative works are not permitted.

Abbreviations:

Abhishek Mitra, MBBS (Email: doctor.mitra@yahoo.co.uk), Victor Palit, FRCS, and Michael Ferro, FRCS, are in the Department of Urology, Huddersfield Royal Infirmary, Lindley, Huddersfield HD3 3EA, UK.

Rabi Paes, FRCR, is in the Department of Radiology, Huddersfield Royal Infirmary, Lindley, Huddersfield HD3 3EA, UK.

Published: July 24, 2008

DOI: 10.2484/rcr.v3i3.188

Sonographic Features of an Adult Granulosa Cell Tumor of the Testis

trophin, lactate dehydrogenase, and placental alkaline phosphatase, were all within normal values.

However an ultrasound scan of his scrotum in the interim showed a 5mm hypoechoic lesion with scattered foci of high level echoes and an area of calcification in the upper pole of the left testicle close to the hilum (Fig. 1) There was a sharp well-defined margin but internal vascularity was noted, and the appearances raised the possibility of malignant disease (Fig. 2). Further discussions with our radiology consultant colleagues suggested that further scans were advisable. The repeat ultrasound scan showed the lesion had increased in size to 7 mm diameter and prominent vascularity was again noted. The features suggested a neoplastic growth and a left radical orchidectomy was subsequently performed.

Histopathological studies of the left testis revealed a solid nodule composed of diffuse sheets of plump spindle and epithelioid cells. The nuclei were ovoid/round and nuclear grooves were apparent. The tumour cells were positive for both vimentin and inhibin while CAM5.2, CD30 and PLAP were all negative. The tumour did not involve the epididymis, spermatic cord or the adjacent seminiferous tubules. The appearances were reported as consistent with adult granulosa cell tumour.

Discussion

A 25-year-old man presented to his general practitioner. A review of the literature suggests that there are almost no common features in the initial presentation

apart from a testicular lump. In many of the cases, the discovery had been incidental or during a routine scrotal examination. Jiminez -Quintero et al, in their report of seven cases in 1993 mentioned testicular enlargement as a common feature with no endocrinal features in any of the cases [1]. In previously published literature, gynecomastia had been described in five cases [1]. Al-Bozom et al reported a case where the ultrasonographic findings were misinterpreted as testicular tuberculosis [3].

An ultrasound examination was done in most reported cases, although the results have not all been documented in the reports. As shown in Table 1, the



Figure 1. 25-year-old man with granulosa cell tumor of the left testis. Sonogram in longitudinal plane shows lesion at the upper pole. The lesion is hypoechoic with scattered foci of high level echoes and an area of calcification.

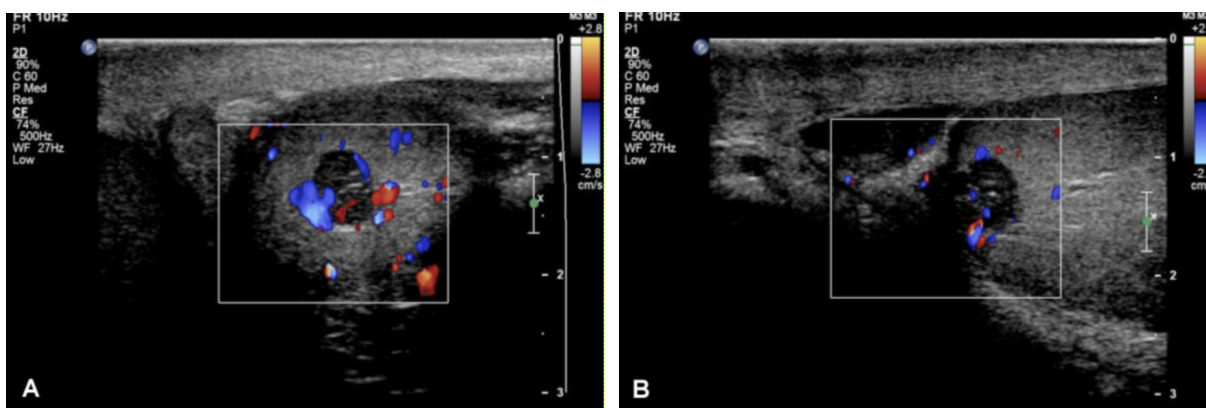


Figure 2A-B. 25-year-old man with granulosa cell tumor of the testis. Doppler sonography in (A) transverse and (B) longitudinal planes shows increased vascularity within the lesion, suggestive of malignancy.

Table 1. Literature review of sonography of adult granulosa tumour of the testis

Study	Year	Clinical Findings	Sonographic Findings
Gaylis et al. [4]	1989	Firm painless mass in testicle	Discrete hypoechoic, non-homogenous intratesticular mass
Al-Bozom et al. [3]	2000	Testicular lump with irregularly lobulated surface and hard consistency	Homogenous appearance with central calcification
Wang et al. [5]	2002	Mild left hydrocoele	'Dime sized' nodule
Koksal et al. [6]	2004	Painless hard and swollen testicle	Large, ill-defined mass with multiple echogenic foci occupying entire testis
Hisano et al. [7]	2006	Painless growing mass in testis	Mass with solid and cystic components and large hydrocoele
Arzola et al. [8]	2006	Painless testicular mass	Well circumscribed complex intraparenchymal mass with largely hypoechoic appearance studded by minute hyperechoic foci.

ultrasound findings have not been consistent but there are a few common features.

Our patient presented with pain, probably due to coincidental episode of epididymo-orchitis. Pain is a rare feature in a tumour (about 8% in the published literature). The tumor was probably incidental although presentation could have been due to stretching of the capsule. Neither the patient nor the examining clinician noticed a palpable lump at any point.

The incidental finding allows us to describe the ultrasound findings in an early diagnosis of adult granulosa tumour of the testis i.e hypoechoic with hyperechoic and calcified foci, sharply defined edge and internal vascularity. Similar findings have been previously described by Arzola [8] and Gaylis [4]. In our case, the increased vascularity within the tumour, demonstrated on the Color Doppler study helped us take the decision to perform an orchidectomy.

Acknowledgement

We are grateful to Dr Padwell, Consultant Histopathologist, who explained this pathology to us in detail.

References

- Jimenez-Quintero LP, Ro JY, Zavala-Pompa A, Amin MB, Tetu B, Ordonez NG, Ayala AG. Granulosa cell tumour of the adult testis. *Human Pathology*. 24:1120-1126, 1993 [PubMed]
- Suppiah AF, Musa MMF, Morgan DRE, North AD. Adult granulosa cell tumour of the testis and bony metastasis. A report of the first case of granulosa cell tumour of the testicle metastasizing to bone. *Urologia Internationalis*. 75:1:91-93, 2005 [PubMed]
- Al-Bozom IA, El-Faqih SR, Hassan SH, El-Tiraiffi AE, Talic RF. Granulosa cell tumour of the adult type. *Archives of Pathology and Laboratory Medicine*. 124:10:1525-1528, 2000 [PubMed]
- Gaylis FD, August C, Yeldandi A, Nemcek A, Garnett J. Granulosa cell tumour of the adult testis: ultrastructural and ultrasonographic characteristics. *The Journal of Urology*, 141:126-127, 1989 [PubMed]
- Wang B, Rabinowitz DS, Granato RC, Uger PD. Gonadal tumour with granulosa cell tumour features in

Sonographic Features of an Adult Granulosa Cell Tumor of the Testis

adult testis. *Annals of Diagnostic Pathology*. 6:56-60, 2002 [PubMed]

6. Köksal IT, Usta M, Ciftcioglu A, Erdogru T, Kukul E, Baykara M. Sex cord tumour of the adult testis. *International Urology and Nephrology*. 35:365-367, 2003 [PubMed]

7. Hisano M, Souza FMM, Malheiros DMAC, Pompeo ACL, Lucon AM. Granulosa cell tumour of the adult testis. Report of a case and review of the literature. *Clinics*. 61:1 77-78, 2006 [PubMed]

8. Arzola J, Hutton R, Baughman S, Mora R. Adult-type testicular granulosa cell tumour: case report and review of the literature. *Urology*. 68:1121.e13-1121.e16, 2006 [PubMed]