



Management of an accidental mass in a monorchidic patient discovered during infertility: a case report

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Introduction and importance: Testicular cancer is the most frequent type of cancer in the young adult men, it is relatively rare. Infertility is an important risk factor for testicular cancer, with a doubled risk of developing cancer compared to the general population. The standard treatment for testicular cancer is the radical orchiectomy, but partial orchiectomy or testicular sparing surgery (TSS) is indicated for small masses, as many experiences, have shown that many small masses found incidentally turn out to be benign.

Case presentation: The authors report the case of a patient presented for primary infertility, a clinical examination for left-sided gynecomastia without inflammatory signs. A testicular MRI revealed a 7 mm suspicious nodule in the posterior-inferior aspect of the right testicle, with contrast enhancement in the juxta-tumoral area corresponding to a heterogeneous area on ultrasound. Due to the lesion described on MRI, monorchidism, and azoospermia, a TSS combined with testicular biopsy and testicular sperm extraction was indicated.

Clinical discussion: The reference treatment for testicular cancer is the radical orchiectomy, but in some selected situations, partial orchiectomy or TSS is indicated, as many experiences have shown that many small masses found incidentally turn out to be benign.

Conclusion: This case suggests that TSS or partial orchiectomy for small nonpalpable testicular masses in monorchidic patients can provide an excellent outcome for the patient.

Keywords: azoospermia, case report, infertility, small testicular masses

Introduction

Testicular cancer is the most frequent type of cancer in young adult men, it is relatively rare accounting 1% of overall cancer and 6% of urological cancer. Radical orchiectomy is the standard treatment for these patients, however, testicular sparing surgery or partial orchiectomy may be performed in some cases, such as patients with a solitary testicle. In addition, many experiences have shown that many small masses found incidentally turn out to be benign^[1].

This report aims to show the interest of partial orchiectomy in small testicular masses, especially in infertile patients.

This case report has been reported in live with the Surgical Case Report (SCARE) Criteria^[2].

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HIGHLIGHTS

- Testicular cancer is the most frequent type of cancer in the young adult men, it is relatively rare. Infertility is an important risk factor for testicular cancer, with a doubled risk of developing cancer compared to the general population.
- The standard treatment for testicular cancer is the radical orchiectomy, but partial orchiectomy or testicular sparing surgery is indicated for small masses, as many experiences, have shown that many small masses found incidentally turn out to be benign.
- The purpose of testicular sparing surgery, a technique commonly used to treat small testicular masses, is to preserve the endocrine function, especially in patients with a single testicle, as well as to preserve an acceptable quality of life for the patient.

Case report

Mr. B.J., 39-year-old, with a history of right monorchidism due to a left testicular regression syndrome, primary infertility for 10 years, and chronic smoking for 10 years, presented for primary infertility.

The clinical examination found a left-sided gynecomastia without inflammatory signs. Examination of the external genitalia revealed good development of secondary sexual characteristics, with the presence of a single right testicle of normal size within the scrotum.

The laboratory tests showed: FSH was 69.53, LH was 23.56, and testosterone was 345.98. His serum alpha-fetoprotein and



Figure 1. T2 coronal-weighted MRI of Testicular shown a 7 mm suspicious nodule in the posterior-inferior of the right testicle.

human chorionic gonadotropin levels were within the normal range. The semen analysis showed azoospermia.

Scrotal ultrasound showed that the right testicle was heterogeneous with multiple suspicious nodular formations, the largest of which measured 6 mm.

A testicular MRI revealed a 7 mm suspicious nodule in the posterior-inferior aspect of the right testicle, with contrast enhancement in the juxta-tumoral area corresponding to a heterogeneous area on ultrasound (Fig. 1).

Due to the lesion described on MRI, monorchidism and azoospermia, a testicular sparing surgery combined with testicular biopsy and testicular sperm extraction (TESE) was indicated (Fig. 2).

The histological test showed (Fig. 3), testicular parenchyma widely remodeled by fibrosis, with hyperplastic Leydig cells interspersed between residual fibrosed seminiferous tubules (Fig. 3).

And the TESE did not reveal any spermatozoa.

The postoperative course was favorable, but the patient developed bilateral gynecomastia due to the loss of testicular tissue and was managed with hormonal supplementation.

Discussion

Testicular cancer is the most frequent cancer amongst the young adult men, it is relatively rare compared to other types of cancer, accounting for about 1% of all cancers in men, but it is the most common cancer in this age group. The most common form is germ cell tumors, either seminomatous or nonseminomatous form, the peak of incidence is in the third decade for seminomatous germ cell tumor, and the fourth decade for the non-seminoma germ cell tumors^[3].

Infertility is an important risk factor for testicular cancer, with a doubled risk of developing cancer compared to the general population. There are many explanations for the causal

relationship between infertility and testicular cancer, which are genetic or hormonal, especially during the in-utero period the hormonal disorder can lead to a problem of embryological development and a defect in the differentiation of the sertoli cells, which can lead to a later spermatogenic disorder and hypogonadism^[4].

The diagnosis of testicular cancer is made following an auto palpation of the patient of a mass at the scrotal level or, the discovery of an incidental testicular mass during a scrotal ultrasound, as in our case where the ultrasound was initially requested as part of an etiological assessment of infertility and then it was completed by an MRI to better characterize the lesion as it recommended by the EAU guidelines^[5].

The reference treatment for testicular cancer is the radical orchiectomy, but in some selected situations, such as small, impalpable masses with normal tumor markers or within the normal limit, partial orchiectomy, or testicle-sparing surgery (TSS) is indicated to avoid an overt-treatment of a benign mass and to preserve testicular function, as many experiences have shown that many small masses found incidentally turn out to be benign^[1].

The purpose of TSS, a technique commonly used to treat small testicular masses, is to preserve the endocrine function, especially in patients with a single testicle, as well as to preserve an acceptable quality of life for the patient. Bieniek *et al.* conducted a study of 120 infertile men who were incidentally diagnosed with hypoechoic subcentimeter testicular masses. The average follow-up duration was 1.3 years, and of the 18 men who underwent surgical exploration, six patients had malignant seminoma, which represented 5% of the total group^[6].

In azoospermic men assessed for infertility, the use of testicular ultrasound and biopsy may reveal a significant number of non-palpable testicular nodules. Eifler *et al.* detected 49 abnormalities in the testicles of 145 men who underwent scrotal ultrasounds to evaluate no obstructive azoospermia. Of these abnormalities, 20 were identified as hypoechoic. Subsequently, 11 men with hypoechoic masses less than 1 cm in diameter underwent excision during semen collection, and all were found to have benign pathology^[7].

For azoospermic patients, performing a TESE should include an anatomopathological examination. This is necessary not only to determine the cause of infertility but also to rule out potentially serious associated conditions, such as germ cell tumors^[4].

In the case reported, the patient underwent a testicular sparing surgery associated with a TESE and a testicular biopsy for suspicious lesions with the result of a hyperplastic leydig cells, which is considered as a benign condition that is exceptionally rare and should be distinguished from testicular neoplasms^[8]. The conservative medical management, and a testicular sparing surgery are recommended, this approach would avoid unnecessary radical surgery for the patient^[9].

Conclusion

TSS or partial orchiectomy for small nonpalpable testicular masses in monorchid patients can provide an excellent outcome for the patient and preserve a tolerable quality of life and body image, and prevent psychological suffering due to castration and the absence of testicles, in opposed to radical orchiectomy.

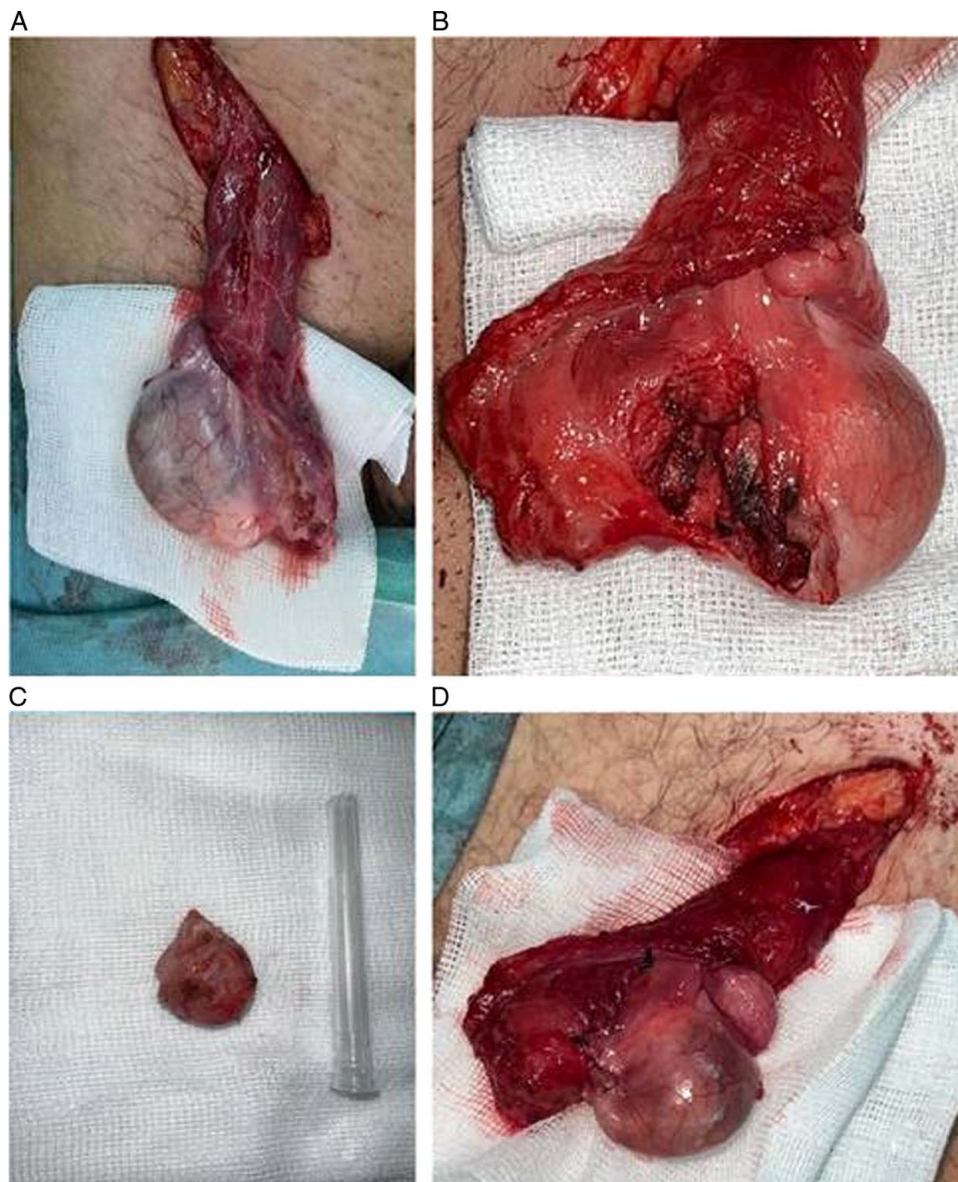


Figure 2. Showing the different parts of the surgery. (A) Showing the testicular nodule at the lower pole of the right testicle. (B) Removal of the lower pole of the testicle. (C) The operating room. (D) After repair of the right testicle.

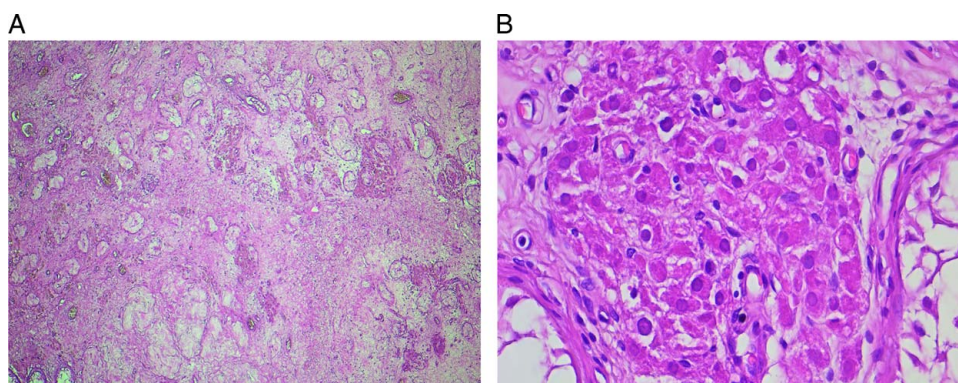


Figure 3. (A) testicular parenchyma widely remodeled by fibrosis with increased interstitial Leydig cells. (Magnification $\times 4$). (B) High power view displaying hyperplastic Leydig cells, of polygonal form, provided with ovoid nuclei, inconspicuous nucleoli and eosinophilic granular cytoplasm, with occasional intracellular Reinke crystals. (Magnification $\times 40$).

Ethical approval

NA.

Consent

Consent written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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Author's contributions

A.E.: developed the original idea and wrote the article; I.B.: analyzed part of the data; A.E.: acquisition of the data; A.H.: acquisition of the data; A.B.: facilitated the access of patient record; A.B.: supervision, data validation, jointly participated in the writing of the final manuscript. All authors read and approved the final manuscript.

Conflicts of interest disclosure

None.

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