



SKILL AND TALENT

ONCO-TESE: obtaining spermatozoa after radical orchiectomy for testicular tumor and azoospermia[☆]



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Received 27 June 2015; accepted 29 June 2015

Available online 23 December 2015

KEYWORDS

Sperm retrieval;
Testicular cancer;
Intracytoplasmic
sperm injection

Abstract

Objective: There is the possibility of diagnosing azoospermia in cases of testicular tumors in patients who wish to preserve fertility. Our objective is to present a technique for obtaining spermatozoa from testicles with *ex vivo* tumors in order to preserve fertility in these patients.

Material and methods: A 34-year-old patient was referred for azoospermia. The physical examination revealed a node in the lower pole of the left testicle. In the scrotal ultrasound, the testicle presented disperse microcalcifications and a 1-cm hypoechoic mass in the lower pole. The tumor markers were negative, and the CT showed no distant disease. Left radical orchiectomy was performed, along with the placement of a testis prosthesis. Bench surgery was then performed, with extraction of the seminiferous tubules in the upper pole.

Results: Of the submitted samples, 4 progressive and 1 nonprogressive motile spermatozoa were identified per field. Two samples were cryopreserved. The pathological report indicated the presence of a seminoma measuring 1.3 cm × 1 cm, with free margins and with no invasion of the rete testis (stage I). An assisted reproduction technique (intracytoplasmic sperm injection) was performed on the patient's partner with the frozen spermatozoa, which resulted in pregnancy and the subsequent birth of a healthy child.

Conclusion: We propose this technique as the method of choice for obtaining spermatozoa from patients who simultaneously present azoospermia and testicular tumors and who wish to preserve their fertility.

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[☆] Please cite this article as: Luján S, Ordaz DG, Rogel R, Broseta E, Pellicer A, Boronat F. Onco-TESE: obtención de espermatozoides tras orquiectomía radical por tumor testicular y azoospermia. Actas Urol Esp. 2016;40:64–67.

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PALABRAS CLAVE

Extracción de espermatozoides;
Cáncer testicular;
Inyección intracitoplasmática de espermatozoides

Onco-TESE: obtención de espermatozoides tras orquiectomía radical por tumor testicular y azoospermia**Resumen**

Objetivo: Existe la posibilidad de diagnosticar una azoospermia en caso de tumor testicular en pacientes que desean preservar su fertilidad. Nuestro objetivo es presentar una técnica de obtención de espermatozoides del testículo con tumor *ex vivo* con el fin de preservar la fertilidad en estos pacientes.

Material y métodos: Paciente de 34 años, remitido por azoospermia. A la exploración física presenta nódulo en polo inferior del testículo izquierdo. En la ecografía escrotal, el testículo presentaba microcalcificaciones dispersas y una masa hipoeoica de 1 cm en el polo inferior. Los marcadores tumorales fueron negativos y el TC no evidenció enfermedad a distancia. Se realizó orquiectomía radical izquierda más colocación de prótesis testicular. Posteriormente se practicó cirugía de banco con extracción de túbulos seminíferos en el polo superior.

Resultados: De las muestras remitidas se identificaron 4 espermatozoides móviles progresivos y uno no progresivo por campo, realizando criopreservación de 2 muestras. El informe anatómopatológico informó de la presencia de un seminoma de 1,3 × 1 cm con márgenes libres y sin invasión de la *rete testis* (estadio I). Se realizó una técnica de reproducción asistida tipo ICSI a su pareja con los espermatozoides congelados con el resultado de embarazo, y posterior nacimiento de un niño vivo y sano.

Conclusión: Proponemos que la realización de esta técnica es el método de elección para la obtención de espermatozoides en pacientes que presenten conjuntamente una azoospermia con tumor testicular y que deseen preservar su fertilidad.

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Introduction

Approximately 50–70% of patients diagnosed with testicular cancer are subfertile at the time of diagnosis, and up to 15% will have azoospermia. Moreover, many of these patients will require adjuvant therapy after performing an orchiectomy such as chemotherapy or radiotherapy. Both techniques are associated with impaired spermatogenesis and secondary infertility which may be prolonged and/or permanent. If we request a spermogram before carrying out these treatments in order to preserve fertility, we can find the diagnosis of azoospermia. In these cases, conducting a surgical technique to obtain sperm even from the testicle presenting the tumor lesion may be indicated.¹ This technique is known as Onco-TESE, from the acronym Oncological-Testicular sperm extraction. Testicular sperm extraction or TESE is a technique that along with intracytoplasmic sperm injection or ICSI offers the opportunity to be parents in cases where an azoospermia occurs. Our goal is to present this new and unusual technique in a patient with azoospermia where the Onco-TESE was performed and thanks to which the couple could have children through an assisted reproduction technique.

Material and methods

34-Year-old patient with a history of infertility for 2 years with his 36-year-old partner referred to our clinic from gynecology due to the presence of azoospermia in

3 spermograms with normal volume and pH. Physical examination revealed the presence of a small-sized left testicle and of normal consistency. In the lower pole, he had a painless nodule of approximately 1 cm. No varicocele was identified anywhere, the vas deferens were palpable and both epididymis were normal. The patient provided a hormonal study with a testosterone of 427 ng/dl, luteinizing hormone (LH) equal to 3.6 IU/l, follicle stimulating hormone (FSH) equal to 5.9 IU/l, and prolactin 13.6 ng/ml. A genetic study had also been performed with a 46 XY karyotype and absence of Y chromosome microdeletions. With the diagnosis of azoospermia and nodular lesion in the lower pole of the left testis, we requested scrotal ultrasound, tumor markers, and thoraco-abdomino-pelvic CT. The scrotal ultrasound showed a hypoechoic lesion with vascularization of 1 cm in the lower pole, the right testis being normal (Fig. 1). His tumor markers were within the normal range (lactate dehydrogenase [LDH]: 394 IU/l, beta human chorionic gonadotropin [beta-HCG] below 1.2 mU/ml and alpha-fetoprotein [AFP]: 1.9 ng/ml). The CT did not identify the presence of distant disease. In order to preserve the integrity of the healthy testicle (right testis), treat the nodule suggestive of left testicular tumor, and try to get sperms fit for cryopreservation, a left radical orchiectomy was indicated with testicular prosthesis placement (at the request of the patient) and *ex vivo* sperm extraction in bench surgery with the extracted specimen. A longitudinal incision of approximately 1 cm was performed in the upper pole of the testis (Fig. 2) and 2 testicular pulp samples were extracted and sent to the

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