Intraoperative diagnosis of seminoma in a man with cryptorchidism and Klinefelter Syndrome planning for m-TESE: A case report

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ABSTRACT

Undescended testes are more likely to undergo malignant transformation than normally descended testes. We present the case of a 33-year-old male smoker who had been suffering from primary infertility for 4 years. This patient had bilateral undescended testes and a frozen section specimen revealed seminoma. In this report, we discussed how important it is to use a combination of different diagnosis modalities to reach a diagnosis.

1. Introduction

Testicular germ cell tumors account for 1%–3% of all malignancies in males in Western populations and are the most prevalent non-hematologic malignancy in males between 15 and 49 years old. Approximately 50% of all germ cell tumors are seminomas. A study indicated that the highest incidence rate for testicular cancer occurs in European countries, with an increasing incidence, especially in young men. One of the risk factors for testicular tumors is an undescended testis. Nepal et al. reported that the incidence of testicular cancer was significantly higher, with a ratio of 10%–15%, in patients with cryptorchidism than in normal populations. Compared to the fertility rate in the general population, in patients with an undescended testis fertility is decreased, although they underwent orchioxy. Patients with bilateral undescended testes have an increased infertility rate compared to those with unilateral undescended testis and the general population. A testicular ultrasound is usually performed as a first line modality, with a sensitivity of 91%–97% and a specificity of 95%–99% for any testicular masses. When combined with a clinical evaluation, the sensitivity reaches approximately 100%. In certain cases, where the nature of testicular lesions is difficult to demonstrate, an MRI might be indicated. We present an interesting case of a patient with an incidental finding of seminoma, with negative preoperative imaging, during microscopic testicular sperm extraction M-TESE and orchidectomy.

2. Case presentation

We present a case of a 33-year-old male smoker, known to have primary infertility for 4 years. This patient had bilateral inguinal undescended testes with a history of a failed trials of right orchidopexy 7 years ago and left orchidopexy, 2 years ago. On examination, the right testis was not palpable, and the left testis was felt at the neck of the scrotum. The patient had two semen analyses, both of which indicated azoospermia. The patient was investigated with a testicular ultrasound which revealed an undescended inguinal left testis and atrophied right inguinal testis. In addition, an MRI was done which indicated an undescended inguinal left testis and a small structure in the right inguinal canal that might represent the right testis [Fig. 1]. Consequently, a Y-Deletion and karyotyping were ordered, and the result was consistent with Klinefelter Syndrome, 47, XXY/48, XXXY Mosaic. The patient was booked for a left orchidopexy, or possibly an orchidectomy and left orchidopexy and M-TESE. Intraopertatively, the left testis appeared suspicious, with a high possibility of malignancy, due to its size. A testicular ultrasound was done intraoperatively to rule out a finding suggestive of a mass, which showed a diffuse heterogeneous left testis with no obvious lesions [Fig. 2]. During the procedure, because the left testis was highly suspicious for malignancy, a frozen section was sent to the Pathology Department. The specimen was a germ cell tumor (seminoma) [Fig. 3 A and B]. A bilateral radical inguinal orchidectomy was decided.
was performed. Postoperatively, a metastatic work up was done, including an abdominal and pelvic CT which demonstrated the involvement of a few left para-aortic lymph nodes with a diameter of 1.7, 0.9 and 0.6 cm. In addition, there was a small left external iliac lymph node with a diameter of 0.7 cm.

3. Discussion

Undescended testes have a higher potential for malignant transformation than normally descended testis. Seminoma is the most frequent carcinoma of the testicle in the fourth decade of life and constitutes 60%–65% of germ cell neoplasia. A testicular ultrasound is usually performed as a first line investigation with high sensitivity and specificity. In combination with a clinical evaluation, the sensitivity reaches approximately 100%. However, in cases where the nature of the testicular lesions is difficult, an MRI may be indicated. This report highlights the importance of intraoperative clinical and pathological investigation of highly suspicious transformation of undescended testes, despite negative pre-imaging modalities.

4. Conclusion

A testicular ultrasound is typically used as a first-line investigation because of its high sensitivity and specificity. When combined with a clinical evaluation, the sensitivity approaches 100%. However, if the nature of the testicular lesions is difficult to determine, an MRI may be recommended. Despite negative pre-imaging modalities, this report emphasizes the importance of intraoperative clinical and pathological investigation of highly suspicious transformation of undescended testes.

Consent

Informed consent was obtained from the patient.
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Declaration of competing interest

All authors have no conflicts of interest to declare.

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