Case Report

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Seminoma in an Atrophic Testis

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Key Words

Seminoma
Testis
Tumor
Atrophy

Abstract

A rare case of a seminoma developing in an atrophic testis is described and the role of testicular atrophy in tumorigenesis is discussed.

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Introduction

Testicular tumors are rare, accounting for less than 2% of all male malignancies. Testicular tumors occurring in atrophic testes are seen even less frequently. In a review of 5,500 cases of testicular tumors, 80 were found to have developed in atrophic testes secondary to nonspecific causes, an incidence rate of 1.5%. Additionally, 24 tumors were found to have developed in atrophic testes secondary to mumps orchitis, an incidence rate of 0.5% [1].

A clinical diagnosis of a tumor in an atrophic testis was made and the patient underwent right radical orchiectomy with inguinal her-niorrhaphy.

The gross specimen revealed a $4 \times 2 \times 1$ cm grey testis with a 2.5×1.5 cm partially lobulated, tan-yellow, firm tumor in the upper pole. The tumor appeared to be in the path of the vascular supply to the testis and also extend 1 cm into the testis. Microscopically there were large cells with round nuclei and abundant clear cytoplasm. The epididymis and cord were free and the rest of the testis showed tubular atrophy with prominent Leydig cells (fig. 1). The diagnosis was consistent with seminoma in a atrophic testis.

The patient was advised radiotherapy to the abdomen but refused. At 6 months after surgery, the serum markers and repeat CT scan of the abdomen remained negative.

Case Report

R.R., a 37-year-old white male, was initially seen in 1983 complaining of a 14-year history of a firm nodule in the right testis which had increased in size over the past 3 months. He had also noticed that the right testis had gradually become smaller over the past year. There was no past history of trauma, mumps, infection, cryptorchidism or inguinoscrotal surgery.

Systemic examination was unremarkable and revealed a normally developed adult male with no evidence of gynecomastia. Local examination revealed a 2×2 cm firm mass in the upper pole of

the right testis. The right testis itself was atrophic measuring $4 \times 2 \times 1$ cm. The spermatic cord and groin nodes were negative. The left testis was normal and there were small bilateral indirect inguinal hernias.

Laboratory investigations, including serum alpha-fetoprotein and beta-human chorionic gonadotrophins, were normal. The meta-static work-up, including a chest X-ray, excretory urogram, and CT scan of the abdomen, was negative.

Discussion

The etiology of malignant testicular tumors is unknown, although it is well known that cryptorchism is associated with an increased incidence of testicular tumors. The role of testicular atrophy in testicular tumorigenesis is unclear since very few cases have been documented and most investigators do not look for this specific entity [2, 3]. In most testicular tumors the testis is enlarged and a previous history of atrophy is difficult to elicit [4].

Cryptorchism occurs in only 1 of 500 men, but the chances of malignancy developing in an undescended testis is 20–48 times greater than a normally descended one [5]. A cryptorchid testis is atrophic to some extent and

Seminoma in an Atrophic Testis

283

TESTICULAR a
iDEFERENS
TUMOR
< bff $\frac{5}{8}$ "

Fig. 1. a Microscopically large cells with round nuclei and clear cytoplasm representing seminoma. HE. $\times 250$. b Areas of tubular atrophy. HE. $\times 400$.

Fig. 2. The tumor 'steals' the vascular supply of the testis resulting in testicular atrophy. Normal testicular size represented by the dotted lines.

what role this atrophy plays in the subsequent development of testicular malignancy is undetermined. Biopsies of atrophic testes might reveal carcinoma in situ which can subsequently lead to overt malignancy. The exact pathogenesis of this condition should be investigated further to determine its role in the etiology of testicular malignancy [6]. Mumps orchitis can also lead to testicular atrophy, and neoplasms, especially seminoma, have developed in such testes [7]. Occasionally, as demonstrated in this case, the tumor might 'steal' the vascular supply of the testis and lead to subsequent testicular atrophy (fig. 2). In this instance the clinical picture resembles an epididymal cyst in an atrophic testis and the diagnosis can be easily overlooked unless there is a high degree of suspicion.

The association between testicular atrophy and testicular neoplasm is still unclear, although there appears to be some relationship. Atrophic testes should be evaluated carefully and testicular biopsies should be done before performing any form of orchiopexy for undescended or atrophic testes. If suspicious nodules coexist in atrophic testes or biopsies reveal carcinoma in situ, radical surgery may be considered to prevent subsequent malignancy.

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