Case Report

Received: September 30, 1986

Accepted: October 14, 1986

Urol. int. 1987;42:79-80

Testicular Metastasis from Carcinoma of the Prostate

B.	Boaz	Moskovitz ^a
H.	Hedviga	Kerner ^b
D.	Dan	Richter Levin ^a

Departments of ^aUrology and ^bPathology, Rambam Medical Center, Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel

Key Words

Prostate carcinoma
Metastasis
Testis

Abstract

In 1 out of 56 patients, orchiectomized in the course of treatment for prostatic carcinoma, metastatic growth in the testis was found. This uncommon metastatic spread is a sign of advanced disease.

Dr. D. Richter Levin, Head, Department of Urology, Rambam Medical Center, Haifa 35254 (Israel)

Introduction

Metastatic spread to the testis from prostatic carcinoma is rare despite the high frequency of carcinoma of the prostate and its ability for wide dissemination via 3 mechanisms: local extension, lymphatic metastasis, and hematogenous dissemination. By using newer immunoperoxidase staining techniques [1] and prostate-specific antigen [2], it has become possible to identify the prostatic epithelial cells better and to recognize the prostatic origin of suspected metastatic lesions of prostate carcinoma.

Case Report

A 75-year-old man was admitted to the hospital with urinary obstruction and back pain. Prostate biopsy showed a poorly differentiated adenocarcinoma. Bone scan revealed extensive metastases to the pelvis, spine, ribs and skull.

The patient underwent transurethral resection of the prostate gland to free his urethra of obstruction and was orchiectomized in an attempt to palliate his symptoms.

On histological examination the right testis showed areas of adenocarcinoma, well to moderately differentiated, in the tunica albuginea as well as in the interstitial tissue between atrophic tubuli. The histologic picture was identical to that seen in the prostatic tissue (fig. 1, 2).

Immunohistochemical stains were positive for prostatic-specific antigen and for prostatic acid phosphatase. The patient's bone pain decreased after the procedure.

Discussion

Nonlymphomatous secondary tumors of the testis are rare. Most authors believe that the most frequent primary site of these tumors is the prostate gland [3–5]. Others have listed the lung as the leading tumor type [6, 8, 9] and then other sites include gastrointestinal tract, skin, kidney, adrenal, pancreas and eye (retinoblastoma).

During the last 5 years we have performed an increasing number of orchiectomies in patients suffering from advanced prostatic carcinoma. We found 1 case of metastasis to the testis in a

series of 56 patients. Among 36 instances of testicular tumor during the last 10 years, we found 2 cases of secondary carcinoma of the testis that were not of prostatic origin. The first case of metastatic growth in a testical secondary to prostatic carcinoma was reported by Semons [7] in 1938. Price and Mostofi [8] found metastasis to testis in only 38 out of 1,600 cases of testicular malignancy. Twelve of these were metastasis secondary to prostatic carcinoma. Johnson et al. [9] showed 22 cases of secondary testicular tumors, in which 2 originated from the prostate gland. Different ways of tumor metastasis have been proposed. These include retrograde venous extension, retrograde lymphatic extension, arterial embolism, through the lumen of vas deferens [10] and direct extension [11].

80

Moskovitz/Kerner/Richter Lev:

Fig. 1. The atrophic testicular tissue and an area of adenocarcinoma in the tunica. HE. X 120.

Fig. 2. An area of adenocarcinoma in the interstitial tissue of the testis. HE. X 120.

The dissemination of prostatic carcinoma to the testis is a sign of an advanced malignant disease. Most often the lesions are unsuspected clinically, and the diagnosis is made after orchiectomy, as was the case in our patient.

It is probable that the increased frequency of orchiectomies to patients with prostatic carcinoma in stage D has caused the observed increase in testicular metastasis.

Newer immunohistochemical techniques, as originally described by Sternberger et al. [12], provide additional valuable diagnostic tools in the investigation of metastatic carcinoma. Several studies have verified a high degree of specificity and sensitivity using immunohistochemical techniques for prostatic acid phosphatase and prostate-specific antigen in primary and metastatic adenocarcinoma of prostatic origin [1, 2, 13–15], which increase diagnostic sensitivity and accuracy.

References

- Ansari, M.A.; Pintozzi, R.L.; Choi, Y.S.; Ladore, R.F.: Diagnosis of Carcinoid like metastatic prostatic carcinoma by an immuno-peroxidase method. *Am. J. clin. Path.* 76: 94 (1981).
- Medical News: Prostatic specific antigen help establish origin of certain tumors. *J. Am. med. Ass.* 245: 2377 (1981).
- Cricio, R.P.; Kandzan, S.J.: Secondary testicular tumors. *J. Urol.* 118: 489 (1977).
- Meares, E.M.; Ho, T.L.: Metastatic carcinomas involving the testis. *J. Urol.* 709: 653 (1973).
- Jepson, P.M.; Labitzke, G.; Bischoff, A.J.: Solitary testicular metastasis from carcinoma of the prostate. *Br. J. Urol.* 44: 594 (1972).
- Worth, V.; Yu, G.; Marshall, F.F.: Nonlymphomatous metastatic tumor to the testis. *Br. J. Urol.* 727: 142 (1982).
- Semons, J.H.: Carcinoma of the prostate with metastasis to the testis. *J. Urol.* 40: 524 (1938).
- Price, E.B.; Mostofi, F.K.: Secondary carcinoma of the testis. *Cancer* 10: 592 (1957).
- Johnson, D.E.; Jackson, L.; Ayola, A.G.: Secondary carcinoma of testis. *Sth. med. J. Nashville* 64: 1128 (1971).
- Wolf, H.; Madsen, P.: Metastasis of the external genitalia from carcinoma of the prostate. *J. Urol.* 99: 192 (1968).
- Pienkos, E.J.; Jablonsky, V.R.: Secondary testicular tumors. *Cancer* 30: 481 (1972).
- Sternberger, L.A.; Hardy, P.H.; Cuculis, J.J.; Meyer, H.G.: The unlabeled antibody enzyme method of immunohistochemistry: preparation and properties of soluble antigen antibody complex and its use in identification of spirochetes. *J. Histochem. Cyto-chem.* 18: 315 (1970).
- Lippert, M.C.; Bensimon, H.; Jaradpour, N.: Immunoperoxidase staining of acid phosphatase in human prostatic tissue. *J. Urol.* 128: 1114 (1982).
- Bentz, M.S.; Cohen, C.; Demess, L.M.; Budgeon, L.R.: Immunohistochemical demonstration of prostatic origin of metastases. *Urology* 19: 584 (1982).
- Nadji, M.; Tabei, S.Z.; Castro, A.; Chu, T.M.; Morales, A.R.: Prostatic origin of tumors: an immunochemical study. *Am. J. clin. Path.* 73: 735 (1980).