

CASE REPORT

doi: 10.5455/medarch.2016.70.318-320

Med Arch. 2016 Aug; 70(4): 318-320

Received: JUN 20, 2016 | Accepted: JUL 15, 2016

© 2016 Zoran Campara, Dejan Simic, Predrag Aleksic, Aleksandar Spasic, and Snjezana Milicevic

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Metastasis of Prostate Adenocarcinoma to the Testis

Zoran Campara¹, Dejan Simic¹, Predrag Aleksic¹, Aleksandar Spasic¹, and Snjezana Milicevic²

¹Clinic of Urology, Military Medical Academy (MMA), Belgrade, Serbia

²Clinic of Urology, Clinical Centre of Banja Luka, Banja Luka, Bosnia and Herzegovina

Corresponding author: Dejan Simic, Clinic of Urology, MMA, Crnotravska str. 17, 11000 Belgrade; Phone: +381641475858, ORCID ID orcid.org/0000-0002-1957-6291. E-mail: dejansimic@gmail.com

ABSTRACT

Introduction: Prostate carcinoma is the most frequently diagnosed carcinoma in the male population. The most typical places of the metastases are pelvic lymphatic glands, bones and lungs, and very rarely it metastasizes into a testis. The prognostic importance of testicular metastasis of prostate cancer is not yet well-known, due to a very few published cases. According to the known facts, it is certain that a metastasis of the prostate carcinoma into a testis is a sign of an advanced disease. **Case report:** This work presents a 48-year-old patient, to whom an adenocarcinoma of the prostate has been proven by the pathohistological finding of transrectal biopsy, performed due to the elevated level of prostate-specific antigen (PSA). Nine years after the initial diagnosis, due to a gradual rise of PSA and tumorous enlargement of the left testis, left inguinal orchiectomy and right orchiectomy were performed. Metastatic dissemination of prostate adenocarcinoma into a testis was determined by a pathohistological analysis of the left testis. **Conclusion:** The metastasis of the prostate carcinoma into a testis, as a rare localization of the metastatic dissemination, after additionally performed orchiectomy along with further oncological therapy, can provide a continuation of a good life quality as well as a control of the disease in a longer time period.

Key words: prostate carcinoma, metastasis, testis, orchiectomy.

1. INTRODUCTION

Prostate carcinoma is the most frequently diagnosed carcinoma in the male population, especially in the developed countries of northern and western Europe, where the incidence is higher than 200 per 100,000 men (1).

The most typical locations of the metastases are pelvic lymphatic glands, bones and lungs, and very rarely it metastasizes into a testis. Bubendorf et al., in the series of 1589 patients with the prostate carcinoma, showed that 35% of the patients had hematogenous metastases, mostly in bones (90%), the lungs (46%) and the liver (25%), while the metastases in the testis were found only in 0.5% of the cases (2). The first case of the prostate carcinoma with metastases into a testis was published by Semans in 1938 (3). In the previous publications, less than 200 cases with testis metastases have been mentioned. (4)

2. CASE REPORT

We present a 48-year-old patient, to whom a transrectal biopsy of the prostate gland was performed in 2005 due to increased level of prostate-specific antigen (PSA) to 597 ng/ml, and the pathohistological (PH) finding revealed an adenocarcinoma of the prostate with the Gleason score 7 (4A+3B) and 80% tumor volume. According to the digitorectal examination, the prostate gland was found to be heterogenous, rough, with the size of an average walnut. Ten days after the biopsy, due to the complete urine retention, a urinary catheter was inserted and then transurethral resection of the prostate was performed.

The patient had pre-surgical value of PSA 132 ng/ml and also elevated levels of: acid phosphatase at 10.74 U/L (up to 6.6), prostatic acid phosphatase 7.7 U/L (up to 3.5) and alkaline phosphatase 146 U/L (up to 136). Pathohistological analysis of the prostatic tissue sam-

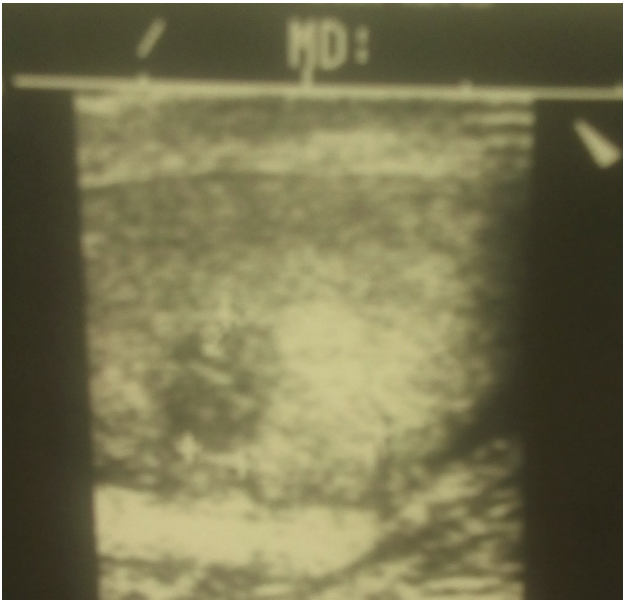


Figure 1. Metastatic focal lesions in the left testis

ple, obtained by transurethral resection, confirmed the existence of prostate adenocarcinoma with the Gleason score 7 (4B+3B) and infiltration of bladder wall, pT4a. Bone scintigraphy showed a clear zone of asymmetrically increased accumulation of radiopharmaceuticals in the VIII right rib, less homogeneous binding in the spine and increased binding of radiopharmaceuticals in the projection of costovertebral joint, right, in level VI. According the decision of the Uro-oncology consilium, the patient was treated with a maximal androgen blockade, zoledronic acid in monthly intervals, as well as the radiotherapy, with dose of 65 Gy in 32 sessions, which was done because of the patient's relatively young age. After 9 years of the initial diagnosis, within the period of 14 months, a gradual increase of PSA from 4.3 ng/ml to 23.09 ng/ml was registered, with inhomogenous, slightly enlarged and firmer in whole left testis.

The values of the tumor markers /AFP, beta HCG and LDH/ were within referential values, and two echo-heterogenous oval zones were identified by the ultrasound examination of the left testis, 10 mm in diameter (Figure 1). Osteoclastic changes in the vertebral bodies TH 6, 8, 11 and L4 were detected by a multisliced computed tomography (MSCT), but bone scintigraphy had normal finding. Left inguinal orchiectomy and right orchiectomy were done, and the PH result of the left testis showed metastases of prostate adenocarcinoma. One month after the surgery, the PSA value fell to 2.76 ng/ml, and the treatment was continued with Bicalutamide (bicalutamide) tablets, 50 mg daily and with zoledronic acid per month. Two years after the bilateral orchiectomy, the patient is symptom free and in good general condition with latest PSA value of 4.22 ng/ml.

3. DISCUSSION

Secondary malignant testis tumors, except infiltrations of leukemia and lymphoma, are rare (5). The testis does not represent a suitable environment for the establishment and growth of the secondary tumors, due to the

relatively low scrotum temperature (6). The prostate carcinoma is the most frequent carcinoma which metastasizes into a testis. Except this carcinoma, metastases in testis can originate from lung carcinoma, carcinoma of gastrointestinal tract, melanoma and kidney carcinoma (7). Unlike primary testis tumors, the secondary ones usually appear in the later life stages (between the ages of 50 and 60). The most common ones are unilateral, rarely bilateral (8).

Although there are cases presented with the scrotum swelling, in most cases the secondary testis tumor is discovered accidentally, by an autopsy (with the incidence of 0.02-2.5%) (7) or after therapeutical orchiectomy (around 4%) (9). Pienkos and Jablockow found an incidence of testicular metastases of 0.06% within the sample of 24,000 autopsies (10). The mechanism of the prostate carcinoma spreading into the testis involves: 1. retrograde veine spreading or embolism, 2. arterial embolism, 3. lymphatic extension or 4. endocanalicular spreading (2). The spreading of the prostate carcinoma to the prostatic urethra increases the risk of metastasizing into the testis (11).

Histological characteristics of the testis metastases are similar to those in the primary prostate carcinoma (8). Since the time period from setting the diagnosis of prostate carcinoma until the determination of testicular metastases lasts from 2.5 to 15 years, histological characteristics of testicular metastases can be changed into another sub-type, such as small-cell carcinoma (12). In group of patient with testicular metastases of prostate carcinoma, survival is usually less than 1 year (13).

The prognostic importance of prostate carcinoma metastases into a testis is not yet familiar, although it is certain that the metastases in the testis are the sign of advanced disease (14). After the bilateral orchiectomy, our patient had the decrease of total PSA level, and the therapy continued with 50 mg of Bicalutamide per day. The patient, who is now 58 years old, has good general health, he works and has regular urological controls.

4. CONCLUSION

The metastasis of the prostate carcinoma into a testis, as a rare localization of the metastatic dissemination, after additionally performed orchiectomy along with further oncological therapy, can provide a continuation of a good life quality as well as a control of the disease in a longer time period.

- Author's contributions: ZC, DS, PA and AS performed the examination and participated in treatment of the patient. ZC performed the follow up. ZC collected the data, analyzed them and wrote the text. SM assisted in writing the text. All authors have read the text and approved the final manuscript.
- Conflict of interest: none declared.

REFERENCES

1. Arnold M. Recent trends in incidence of five common cancers in 26 European countries since 1988: Analysis of the European Cancer Observatory. *Eur J Cancer*. 2015; 51: 1164.

2. Bubendorf L, Schopfer A, Wagner U. et al. Metastatic patterns of prostate cancer: an autopsy study of 1589 patients. *Hum Pathol* 2000; 31: 578-83.
3. Semans JH. Carcinoma of the prostate with metastases to the testes. *J Urol*. 1938; 40: 524.
4. Schneider A, Kollias A, Woziwodzki J, et al. Testicular metastasis of a metachronous small cell neuroendocrine prostate cancer after anti-hormonal therapy of a prostatic adenocarcinoma. Case report and literature review. *Urologe A*. 2006; 2013: 75-80.
5. Tiltman J. Metastatic tumours in the testis. *Histopathology*. 1979; 3: 31-7.
6. Smallman LA, Odedra JK. Primary carcinoma of sigmoid colon metastasizing to epididymis. *Urology*. 1984; 23: 598-9.
7. Dutt N, Bates AW, Baithun SI. Secondary neoplasms of the male genital tract with different patterns of involvement in adults and children. *Histopathology*. 2000; 37: 323-31.
8. Manikandan R, Nathaniel C, Reeve N, Brough RJ. Bilateral testicular metastases from prostatic carcinoma. *Int J Urol*. 2006; 13: 476-7.
9. Haupt B, Ro JY, Ayala AG, Zhai J. Metastatic prostatic carcinoma to testis: Histological features mimicking lymphoma. *Int J Clin Exp Pathol*. 2009; 2: 104-7.
10. Pienkos EJ, Jablokow KR. Secondary testicular tumors. *Cancer*. 1972; 30: 481-5.
11. Tu SM, Reyes A, Maa A, et al. Prostate carcinoma with testicular or penile metastases. Clinical, pathologic, and immunohistochemical features. *Cancer*. 2002; 94: 2610-17.
12. Kusaka A, Koie T, Yamamoto H, et al. Testicular metastasis of prostate cancer: a case report. *Case Rep Oncol*. 2014 Sep 18; 7(3): 643-7.
13. Weitzner S. Survival of patients with secondary carcinoma of prostate in the testis. *Cancer*. 1973; 32: 447-9.
14. Kwon SY, Jung HS, Lee JG, Choi SH, Kwon TG, Kim TH. Solitary testicular metastasis of prostate cancer mimicking primary testicular cancer. *Korean J Urol*. 2011 Oct; 52(10): 718-20.