High-grade adenocarcinoma of the prostate in a 32-year-old patient

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ABSTRACT

Introduction: Prostate cancer (PCa) is commonly associated with old age, but it can develop in patients under 40 years old. Furthermore, early occurrence of this cancer is associated with higher mortality and worse prognosis.

Case presentation: A 32-year-old patient presented with lower back pain. CT, and MR Imaging tests revealed multiple enlarged lymph nodes in the pelvis and sacral bone remodeling. Later Histopathological and immunohistochemical examination of the lymph nodes revealed granular metastases, suspected of Prostate cancer. After a biopsy of the prostate and additional imaging tests, diagnosis of advanced adenocarcinoma prostate was confirmed. As the lesions were no longer operable, the patient received palliative treatment.

Conclusion: Young patients may also suffer from Prostate cancer, so they should not be excluded from the differential diagnosis. Moreover, disseminated cancer lesions may manifest themselves with very non-specific symptoms.

Keywords: High-grade adenocarcinoma, prostate

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INTRODUCTION

The most commonly diagnosed tumor in men is prostate cancer. It is mainly diagnosed in men older than 50 years old (median age of 66 years old). Early onset disease is often associated with a more aggressive course of the disease [1]. Here we present a case report of a 31-year-old male with advanced prostate cancer.

CASE PRESENTATION

A 32-year-old patient presented with lower back pain radiating to the left side of the pelvis. He denied other symptoms and chronic diseases. Imaging tests (CT and MRI) revealed enlarged retroperitoneal and pelvic lymph nodes (with up to 43x33mm in size) and numerous lesions in bones: remodeling of sacrum and osteochondrosis within multiple vertebrae. Because of extensive lesions in the sacrum, the patient was primarily suspected of chondrosarcoma.

On the later FDG-PET CT, a higher accumulation of radiotracer was observed in the sacral bone, C7, TH9-12 vertebrae, numerous retroperitoneal lymph nodes, and the left seminal vesicle. The lymph node laparoscopic biopsy and their histopathological examination revealed a glandular component. The morphological image and immunophenotype (PSA (+), pan-keratin (+), CK7(-), CK20 (-), CD30(-) TTF1) of the cancer cells indicated the prostate gland as the source. A PSAc blood test was performed, with a level of 554 ng/ml. A transrectal ultrasound-guided biopsy of the prostate demonstrated adenocarcinoma prostatae G2 with a Gleason score of 8 (4 + 4) within the whole material. Genetic tests did not reveal any mutations that could cause tumor formation (including BRCA mutations). TNM grading was established as cT3bN1M1. The initial treatment included hormonotherapy with Degarelix, later changed to Reseligo and Enzalutamide, supportive treatment (zoledronic acid), and palliative high-fraction radiotherapy of the sacral bone and left hip joint, to assess the pain symptoms. The patient was also administered several courses of chemotherapy (Docetaxel and later CBDCA+PXL). After the treatment, the PSA levels lowered to 25ng/ml. Initially, the patient suffered from severe, chronic pain, which was treated with pregabalin and tramadol, without improvement, however, it was later reported that radiotherapy reduced the pain by 70%.

Figure 1. Adenocarcinoma of the prostate (Gleason score 9), x100

Within 2 years after initial diagnosis, new bone metastases (multiple lesions within pelvic bone) were found using bone scintigraphy. CT imaging showed enlargement of the prostate (40x35mm), and asymmetry of seminal vesicles, and recorded PSA levels were 25 ng/ml. At the time the patient was still being treated with hormonotherapy and zoledronic acid. Additional high-fraction palliative radiotherapy (36 Gy in 12 fractions of 3.0 Gy within 16 days) of prostate and seminal vesicles was administered.

Within the next year, the control CT showed new metastatic lesions in cervical, thoracic, and lumbar vertebrae, ribs, scapulas, sternum, clavicular, and pelvic bones that were later confirmed by bone scintigraphy. In later months additional courses of radiotherapy for pelvic bone,
thoracic (Th7-Th9), and lumbar (L1-L4) vertebrae metastases were administered. The patient also underwent chemotherapy using doxorubicin and cyclophosphamide.

DISCUSSION

Adenocarcinoma prostate is a type of tumor that develops from the glandular part of the prostate and on the microscopic examination it shows a typical glandular pattern. Around 0.5 % of newly diagnosed patients are younger than 45 years. The incidence is increasing in well-developed countries, which may be caused by an increase in PSA screenings, prior underdiagnosis, or overdiagnosis [1]. Bleyer et. al. identified other risk factors that may contribute to increased morbidity of prostate cancer, including decreased physical activity, obesity, exposure to environmental carcinogens, and HPV infections. One of the youngest recently recorded patient was 13 years old [1]. According to this study patients diagnosed between 25 to 40 years old (9%) present more cases of distant metastases upon diagnosis compared to the group of 40 to 80-year-old patients (4%) [2].

Patients with Prostate cancer can present various unspecific symptoms, including lower urinary tract symptoms (LUTS), hematuria, dysuria, or bone pain. A study by Huang et al revealed that LUTS are more common in patients older than 50 years old. Also, almost 40 % of patients were diagnosed incidentally. Unfortunately, this study has a limited group of patients, but brings to our attention that younger patients frequently presented without any symptoms or with non-specific symptoms [3].

Prostate-specific antigen (PSA) is a good screening test even for early prostate cancer cases. Still, there are many other causes of high PSA including prostate disease, trauma, inflammation, prostatitis, urogenital procedures, biopsies, or prostatic enlargement [4]. That means that to confirm the diagnosis of prostate cancer we need to perform a biopsy. During the biopsy, transrectal USG is used to assess the localization and size of the tumor [5]. To visualize the metastases, the recommended tests are PET scans, so far the best and the most specific for prostate cancer is 68Ga-PSMA (Galium 68 prostate-specific membrane antigen) [6].

Treatment of cancerous lesions is based on surgery, pharmacological treatment, and radiotherapy. Radical prostatectomy is usually recommended for patients with localized, non-metastatic lesions after radiation therapy or cryotherapy. In patients with advanced disease or/multiple metastases, the treatment that appears to be most effective is radiotherapy combined with androgen deprivation therapy (ADT). One type of radiotherapy is external beam radiation therapy (EBRT), which involves sending strong X-ray beams precisely into the prostate tissue. Furthermore, EBRT can relieve symptoms such as bone and joint pain. ADT involves limiting the production of testosterone and other male hormones that fuel Prostate cancer cells. Another effective treatment method used to kill or inhibit the growth of cancer cells is chemotherapy. Nowadays the most commonly used chemotherapeutics are docetaxel, cabazitaxel, and enzalutamide. [7]

Our patient presented lower back pain, which is not a common symptom of prostatic cancer. First imaging tests did not reveal any abnormalities in the prostate, but thanks to them metastases in lymph nodes were detected, indicating primary cancer in the prostate. Due to a large number of metastases, radical prostatectomy was not recommended and the only treatment left was pharmacological treatment and radiotherapy. However, despite the advanced stage of the cancer, the treatment reduced pain and extended the patient’s life.

CONCLUSIONS

Prostate cancer can have a more aggressive course of the disease in patients under 40 years. Additionally, early-onset prostatic cancer often present without or with non-specific symptoms, creating diagnostic problems. We hope that our case report can bring attention to doctors about non-specific symptoms of Prostate cancer in younger patients.

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Conflict of Interest

The authors declare that they have no competing financial or any other conflict of interests that could have appeared to influence the work reported in this paper.

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