Regression of bone metastasis in metastatic castration-resistant prostate cancer


*Urology service, Centro Médico Nacional 20 de Noviembre, Instituto de Seguridad y Servicios Sociales para los Trabajadores del Estado, Mexico City, Mexico

University Center of Health Sciences, Universidad de Guadalajara, Guadalajara, Jalisco, Mexico

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Abstract

Introduction: There have been significant modifications in metastatic castration-resistant prostate cancer management in the last decade, with great changes in the treatment paradigm, even though the disease will ultimately continue to progress despite the currently available treatments.

Case report: A 72-year-old man diagnosed with castration-resistant prostate cancer underwent a bone scintigram that identified metastatic bone lesions. He was treated with abiraterone, with clinical and biochemical response. Follow-up revealed regression of bone metastasis documented in the bone scintigram.

Conclusions: This clinical case shows the particularity of apparent bone lesion regression in the context of metastatic castration-resistant prostate cancer after treatment with abiraterone acetate that also showed sustained clinical and biochemical response.

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Regresión de metástasis óseas en cáncer de próstata metastásico resistente a castración

Resumen

Introducción: El manejo del cáncer de próstata metastásico resistente a la castración ha variado notablemente en la última década con grandes cambios en el paradigma de tratamiento, aunque, en última instancia, la enfermedad seguirá progresando a pesar de los tratamientos disponibles en la actualidad.
Introduction

Prostate cancer (CaP) is the second cause of death by cancer in men in the western world, just behind lung cancer.1-2 According to the 2013 American Cancer Society estimates, more than 230,000 men in the United States will be diagnosed with CaP and approximately 29,720 will die from the disease.2 From its diagnosis to death, CaP progresses through a series of clinical stages characterized by disease extension and the presence or absence of metastasis. Metastatic castration-resistant CaP management has undergone significant modifications over the past decade, with great changes in the treatment paradigm, even though despite the currently available treatments, the disease will ultimately progress.

The use of abiraterone acetate has been shown to be associated with an increase in overall survival and biochemical progression-free pathology in the context of castration-resistant disease before systemic chemotherapy treatment.

Case presentation

A 72-year-old man with no family history of CaP, presented with a high prostate-specific antigen level (28.5 ng/ml) and a suspicious digital rectal examination. The histopathologic study from the transrectal biopsy of the prostate reported prostate adenocarcinoma with a Gleason score of 9 (5+4). Extension studies detected metastatic lymph node disease at the pelvic level and a technetium-99m methylene diphosphonate bone scan showed adequate radiotracer concentration in the bone tissue with no clear radiotracer uptake by the bone tissue with an increased ionic exchange zone in the left frontoparietal region and the left femoral head (fig. 1). The performance status of the Eastern Cooperative Oncology Group (ECOG) was 0. Complete androgen blockade management was begun. After a 5-year period of biochemical control, the patient presented with a gradual increase in prostate-specific antigen level until reaching 13.15 ng/ml, with a confirmation value of 14.2 ng/ml and corroborated castration-range testosterone. A new bone scan documented the absence of bone progression, but the patient presented with bone pain (3/10 on the Visual Analog Scale).

Treatment with abiraterone acetate (1,000 mg every 24 hours) was begun and the patient presented with a sustained clinical response and a marked decrease in bone pain. He also had biochemical response, with a nadir of 0.34 ng/ml during follow-up. Six months later, the control technetium-99m methylene diphosphonate bone scan showed adequate radiotracer concentration in the bone tissue with no clear data of metastatic bone pathology (fig. 2). Computed axial tomography revealed no evidence of visceral metastatic lesions. The patient continues to be under oncologic surveillance, and his clinical performance status is ECOG 0.

Discussion

The majority of patients initially respond to androgen deprivation therapy. Unfortunately, CaP patients ultimately stop responding 1-3 years after hormone therapy and then develop castration-resistant prostate cancer.3 The COU-AA 302 study, which grouped together patients with castration-resistant prostate cancer, evaluated radiologic progression-free survival as one of the primary aims of efficacious therapy. Radiologic progression was defined in the bone scan evaluation as progressive disease in accordance with the Prostate Cancer Working Group 2. Consistent benefit in terms of bone disease was shown, with a significant reduction in the risk for radiologic progression at the bone level (16.5 vs. 8.3 months in the group treated with placebo after 2-year follow-up). The present review describes a patient that had symptomatology remission with a regimen of abiraterone acetate before cytotoxic chemotherapy, as well as apparent absence of the imaging data consistent with metastatic disease.

Conclusions

Opportune diagnosis of metastatic castration-resistant CaP with a minimum of symptoms and treatment in this setting offers the possibility of improved quality of life and survival. The present clinical case shows the particularity of apparent bone lesion regression in the context of metastatic castration-resistant prostate cancer after beginning treatment with abiraterone acetate, while showing clinical and biochemical response with the sustained administration of the drug.

Ethical responsibilities

Protection of persons and animals. The authors declare that the procedures followed conformed to the ethical
Figure 1  Radiotracer hyper-uptake in the left frontoparietal region and the left femoral head.
standards of the responsible committee on human experimentation and were in accordance with the World Medical Association and the Declaration of Helsinki.

Data confidentiality. The authors declare that they have followed the protocols of their work center in relation to the publication of patient data.

Right to privacy and informed consent. The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the corresponding author.

Financial disclosure
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Conflict of interest
The authors declare that there is no conflict of interest.

References