Journal Of Case Reports: Clinical & Medical

Editorial

Metastatic Prostate Cancer with Undetectable PSA

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ARTICLE INFO

Received Date: April 08, 2020
Accepted Date: April 14, 2020
Published Date: April 16, 2020

KEYWORDS

Metastatic Prostate Cancer
PSA
CEA

Citation for this article: Mohand Alzughaibi. Metastatic Prostate Cancer with undetectable PSA. Journal Of Case Reports: Clinical & Medical. 2020; 3(2):151

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EDITORIAL

The intimate relationship between PSA and Prostate cancer -in terms of diagnosis and follow up-has been established since its introduction in the 1980s [1]. The burden of the disease can be correlated to the level of PSA which explains the elevation in serum levels of PSA in patient with metastatic prostate cancer [2]. However, less than 1% of patients with prostate cancer present with inappropriately low PSA [3].

SUMMARY

78 Year old male Known case of hypertension, diabetes, chronic kidney disease, dyslipedimia and ischemic heart disease presented to clinic January 2017 with Lower Urinary Tract Symptoms (mainly intermittency, hesitancy, poor flow). Patient was diagnosed with a urinary tract infection 3 days prior to his presentation and was started on antibiotics. Digital rectal examination was consistent with an enlarged and firm prostate without any hardness or nodularity identified. Prostate specific antigen (PSA) was 20ng/mL, but was dismissed as he had positive urine culture. Prostate size on ultrasound was 112 ml. Patient was started on tamsulosin, dutasteride and the antibiotic regimen was continued. During his follow up another PSA was done 3 weeks after previous PSA with a result of 13 ng/ml. Patient presented to emergency department in 1 month, with urinary retention and was scheduled for transurethral resection of Prostate with transrectal ultrasound guided biopsy. Pathology results were consistent with conventional prostatic adenocarcinoma (Gleason score = 10). Staging computed tompography of chest, abdomen and pelvis and bone scan were all negative. Patient was started with Bicalutemide 50 mg daily for 2 weeks followed by leuprolide acetate 22.5 mg and received radical external beam radiotherapy of 60Gy in 20 fractions. PSA dropped to <0.005 ng/ml and testosterone was 0.38. Patient presented to emergency department after 6 months of completing radiotherapy complaining of progressive lower back pain and urinary incontinence. Spine MRI was done and showed Cord compression in the level of L1 (Figure1). CT scan of the abdomen and pelvis showed multiple areas of metastasis to liver, multiple retroperitoneal lymph nodes and extensive metastasis to lumbar spine. Carcinoembryonic Antigen (CEA), Alpha-Fetoprotein (AFP) and Carbohydrate Antigen (CA) 19-9 were ordered for the patient as part of metastatic workup as the patient had a liver lesion on imaging. Patient was started on prednisolone 4 mg daily and abiraterone. Biopsy was taken from the liver showing poorly differentiated carcinoma suggesting prostatic origin. Patient was referred to palliative medicine for pain control. Patient passed away on February 2018 due to multiple organ failure.

DISCUSSION

The possibility of having a metastatic disease despite undetectable PSA levels, have been reported previously in very few cases most of which have underwent prostatectomy [4]. Michael G. Oefelein and his colleagues found in 2.3% of 394 patients who underwent prostatectomy evidence of metastatic disease despite undetectable PSA [5].

Leibovici and and his colleagues found in their study which included 10 patients with evidence of progression and metastasis despite undetectable PSA that certain characteristics can be indenteifeid in such group. These characteristics includes: Gleason scores >7, atypical histologic variants, particularly small cell and ductal cancers, and locally advanced tumors [1].

It has been demonstrated in few cases reported previously that an elevation of Carcinoembryonic Antigen (CEA) and carbohydrate antigen 19-9 (CA19-9) can be poorly differentiated adenocarcinoma of the prostate [3].

CONCLUSION

Prostate cancer with undetectable PSA is a very rare subset of castration resistant prostate cancer that needs a high index of suspicious by the clinician.

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