Case Report

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Adenocarcinoma Prostate Converted Into Neuroendocrine Tumor

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Abstract

Prostate cancer is the second most[1] common malignancy diagnosed in males worldwide with an incidence of 5.5% in Indian males.[2,3]

Most common histopathology is adenocarcinoma constitute 93% a tumor type driven by androgen and increased prostate specific antigen (PSA).

Rarely patient may present with de novo small cell carcinoma of prostate, a poorly differentiated neuroendocrine carcinoma.

But patient diagnosed as adenocarcinoma and conversion into Neuroendocrine tumor is extremely rare phenomenon in prostate cancer.

Keywords: Neuroendocrine prostate; Ca prostate converted.

CASE REPORT

- A 71 year male known case of Adenocarcinoma prostate under hormonal therapy since may 2019 withintial PSA 15, who underwent Radical prostatectomy and bilateral orchidectomy at 2019.
- Post-op histopathology revealed T2cN0M0 and Gleason 4+5.
- Patient denied adjuvant Radiation therapy, hence started with Androgen deprivation therapy (ADT).
- Patient continued ADT with serial PSA monitoring which was under normal range.
- After 3 yrs of ADT patient developed severe weakness and abdominal distension. PSMA PET SCAN reveals mass in tumor bed side (SUV =7) with multiple liver, bone and nodal metastasis.
- Biopsy from tumor bed and Liver mets revealed Neuroendocrine Tumor.
- Patient received chemotherapy with low dose etoposide and cisplatin due to elderly age.
- Disease was progressive and patient lost life with in 2 months of diagnosis of NEPC.

CASE DISCUSSION

- Neuroendocrine prostate cancer (NEPC) is an aggressive variant form that is characterized

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by low or absent androgen receptor (AR) expression.[4]

- De novo NEPC accounts for less than 2% of all prostate cancers, but treatment induced NEPC occurs in 10–17% of patients with castration resistant prostate cancer (CRPC) by evolving from adenocarcinoma, probably as a result of a transdiffentiation process.[7-10]
- This histologic transformation occurs as a mechanism of treatment resistance.[7,11]
- Patient developing treatment related NPE Care considered for platinum based chemotherapy regimens.[5,10]

CONCLUSION

- Like Receptor conversion in breast cancer metastases very common especially in brain, liver metastases.[11]
- There is increasing trend of conversion of Adenocarcinoma of prostate NEPC which need to monitored in CRPC with sudden progression of symptoms.
- Which is very aggressive and carries a poor prognosis.[12]
- In a known case of Adenocarcinoma prostate post surgery after surgical castration and under medical castration with PSA level under normal range conversion into NEPC is extremely rare and hence this case needs special attention.

REFERENCES

1. GLOBOCON
2. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4831497/
3. https://www.researchgate.net/publication/271332914_Epidemiology_of_prostate_cancer_in_India.
4. https://en.wikipedia.org/wiki/Histopathologic_diagnosis_of_prostate_cancer.
5. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6803064/#R7.
6. Aggarwal R, Huang J, Alumkal JJ, et al. Clinical and genomic characterization of treatment-emergent small-cell neuroendocrine prostate cancer: a multi-institutional prospective study. J ClinOncol 2018;36(24):2492–503. [PMC free article] [PubMed] [Google Scholar]
7. Abida W, Cyrta J, Heller G, et al. Genomic correlates of clinical outcome in advanced prostate cancer. Proc Natl AcadSci U S A 2019;116(23):11428–36. [PMC free article] [PubMed] [Google Scholar]
8. Bluemn EG, Coleman IM, Lucas JM, et al. Androgen receptor pathway-independent prostate cancer is sustained through FGF signaling. Cancer Cell 2017;32(4):474–89. E6. [PMC free article] [PubMed] [Google Scholar]
9. Beltran H, Prandi D, Mosquera JM, et al. Divergent clonal evolution of castration-resistant neuroendocrine prostate cancer. Nat Med 2016;22(3):298–305. [PMC free article] [PubMed] [Google Scholar]
10. Beltran H, Tagawa ST, Park K, et al. Challenges in recognizing treatment-related neuroendocrine prostate cancer. J ClinOncol 2012;30:e386–9. [PubMed] [Google Scholar]
11. Hoefnagel LD, van de Vijver MJ, van Slooten HJ, Wesseling P, Wesseling J, Westenend PJ, Bart J, Seldenrijk CA, Nagtegaal ID, Oudejans J, van der Valk P, van der Groep P, de Vries EG, van der Wall E, van Diest PJ. Receptor conversion in distant breast cancer metastases. Breast Cancer Res. 2010;12(5):R75. Doi: 10.1186/bcr2645. Epub 2010 Sep 23. PMID: 20863372; PMCID: PMC3096964.
12. Hiroaki Iwamoto, Ryunosuke Nakagawa, Tomoyuki Makino, Suguru Kadomoto, Hiroshi Yaegashi, Takahiro Nohara, Kazuyoshi Shigehara, Kouji Izumi, Yoshifumi Kadono And Atsushi Mizokami Anticancer Research April 2022, 42 (4) 2167-2176; DOI: https://doi.org/10.21873/anticanres.15699.