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A Transformation of Prostate Adenocarcinoma to Small Cell Carcinoma

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Introduction

- Prostate Adenocarcinoma is the most common cancer in males, after melanoma
- <0.5-2% of these reported cases transform into Small Cell Carcinoma of the Prostate (SCCP) (1)
- SCCP has an aggressive clinical course and is a clinically distinct disease from prostate adenocarcinoma (3)
- Overall, SCCP carries a poor prognosis with poor overall survival despite modern therapies
- This case representation depicts this rare malignancy, noted in a middle aged male

Case Presentation

- 57yo with relevant past medical history of stage IV prostate adenocarcinoma

Oncological timeline:

- Initially presented with fatigue and feeling poor overall
- Diagnosed with Stage IV prostate adenocarcinoma via lymph node biopsy
- At that time, CT imaging showed metastatic disease with lymphadenopathy in retro peritoneum and pelvis
- Treatment included combined androgenic blockade plus taxotere and prednisone
- Disease was controlled for a short time but he then began to feel poorly again after a period of about 24 months
- Repeat lymph node biopsy confirmed transformation from adenocarcinoma to small cell carcinoma of the prostate

Further Diagnostic Workup:

- CT abdomen after SCCP diagnosis showed multiple soft tissue masses in pelvis and abdomen with increase in lymphadenopathy
- Imaging also notable for osseous metastasis in lumbar spine and femur
- PSA during initial Prostate Adenocarcinoma diagnosis: 58.4 ng/mL
- PSA at SCCP diagnosis: 45.9 ng/mL despite increased severity of disease at this point in his course
- PSA peak throughout disease course: 160.2

Treatment/Management:

- Initial management of Prostate Adenocarcinoma included androgenic therapy plus taxotere + prednisone with little response
- For transformation to SCCP, patient received Carboplatin plus Etoposide which is standard therapy

Notable Clinical Features of SCCP

- Rapidly progressive disease, aggressive in nature (1)
- Little or no response to androgenic therapy
- Signs and symptoms of large prostatic or pelvic soft tissue masses, bulky lymphadenopathy or involvement or viscera
- Serum PSA lower than expected for disease burden that does not correlate with the effect of any treatments
- High prevalence of lytic bone lesions noted in imaging

Photos

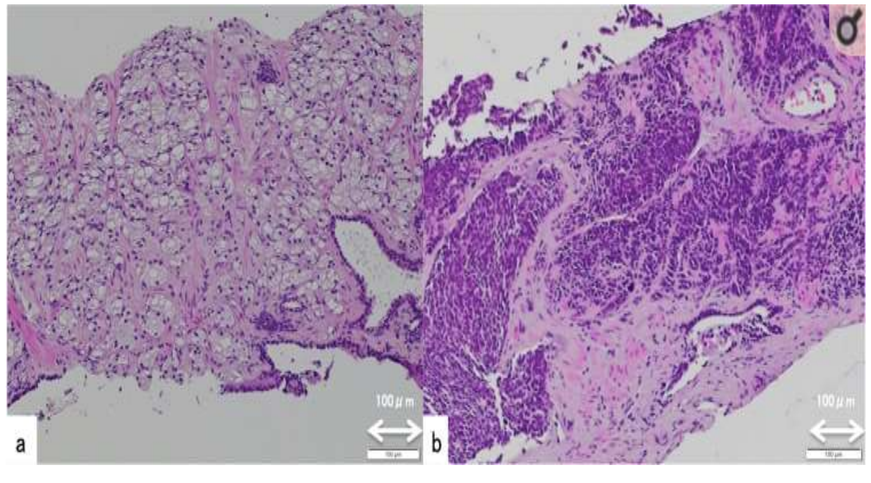

Figure a. Adenocarcinoma of the Prostate, Figure b. Small Cell Carcinoma of Prostate (3)

Discussion

- While prostate adenocarcinoma carries a good prognosis with available therapies, SCCP does not
- 40-50% of men diagnosed with SCCP have a history of conventional prostate adenocarcinoma although SCCP can arise de novo (1)
- It carries a median survival rate of 1-2 years from date of diagnosis (2)
- Reports show that the median interval between diagnosis of prostate cancer and newly diagnosed SCCP is about 25 months (2)
- Favorable prognostic factors include prostatectomy with radiation, age <60, absence of metastasis, and a mixed low-grade prostate adenocarcinoma (2)
- Important to note that it is common for these patients to have a low PSA out of proportion to extent of disease (2)

Conclusion

- This case demonstrates the aggressive nature despite standard therapy for SCCP
- Due to its poor prognosis, this shows that further evaluation and research of possible therapies are needed. However, the rarity of this disease process does pose challenges
- Due to the progressive nature, it is critical that these patients have tissue biopsy with treatment initiation if SCCP is suspected, despite a low PSA level

References

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