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Disease-Focused Panels

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Small Cell Carcinoma of the Prostate:SCCP

Presented By:

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Case History:

- 74 yr old presented with bilateral hydronephrosis and right lower extremity swelling.

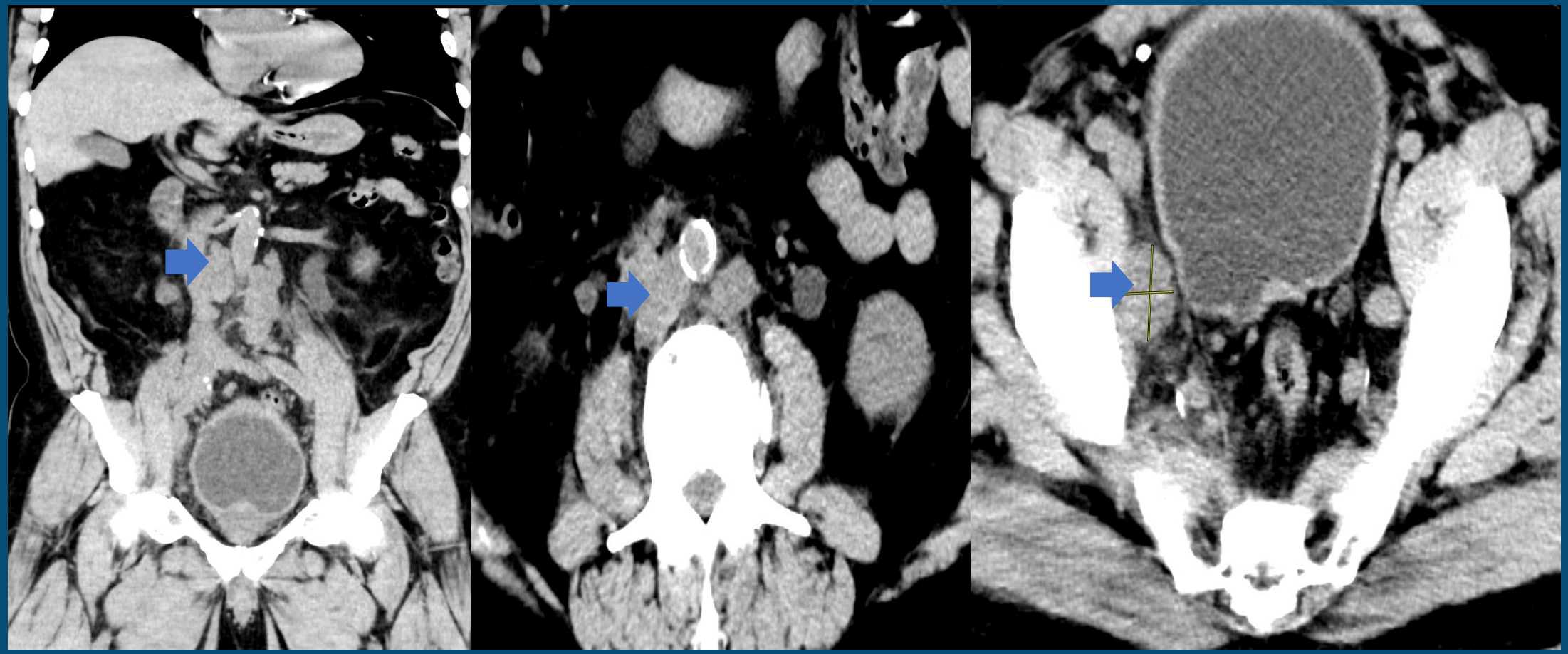
Labs:

Labs	Value
PSA, Free	6.06
PSA	9.69
Creatinine	1.39

Imaging:

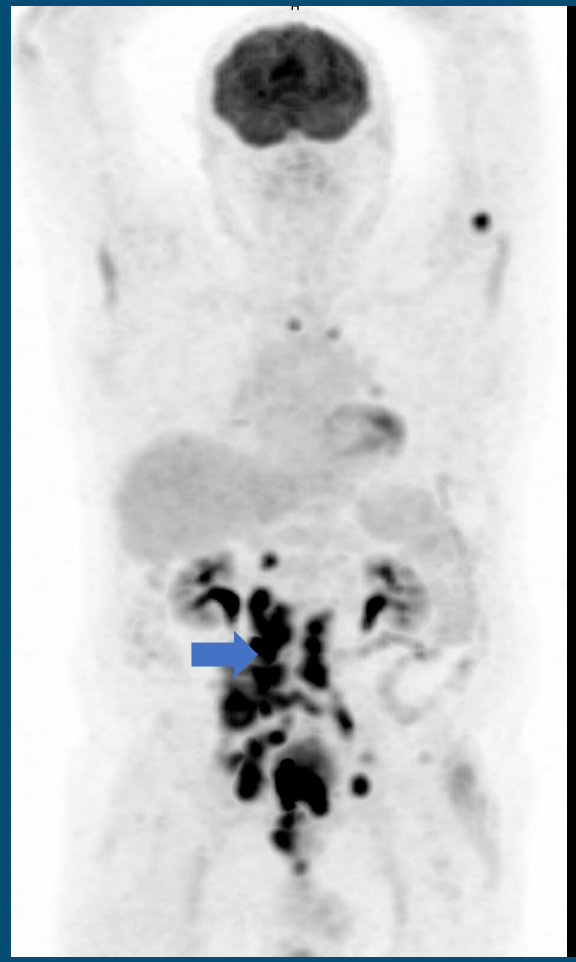
- CT of the Abdomen and pelvis
- Axumin PET scans

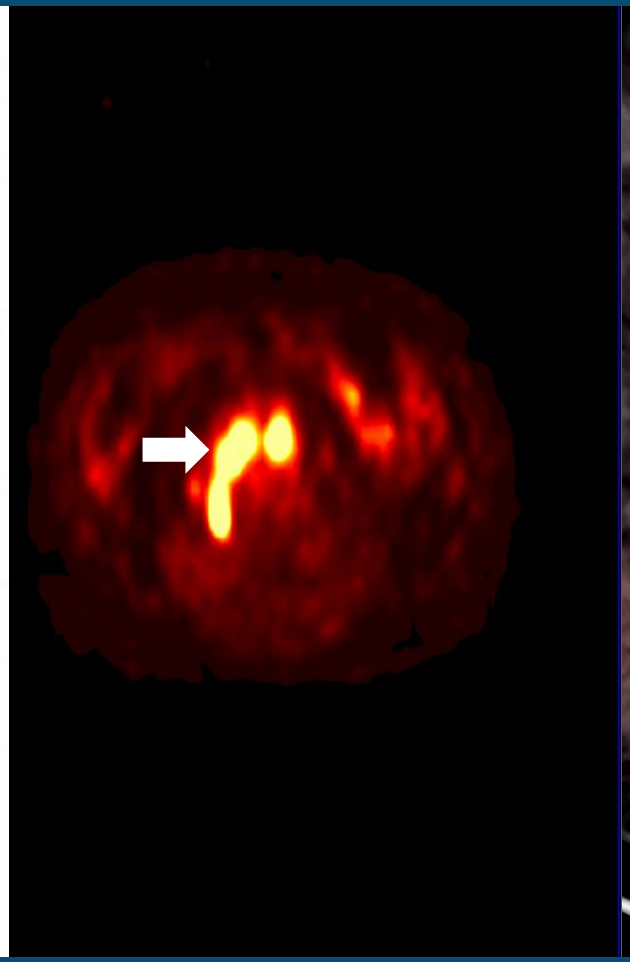
CT Imaging

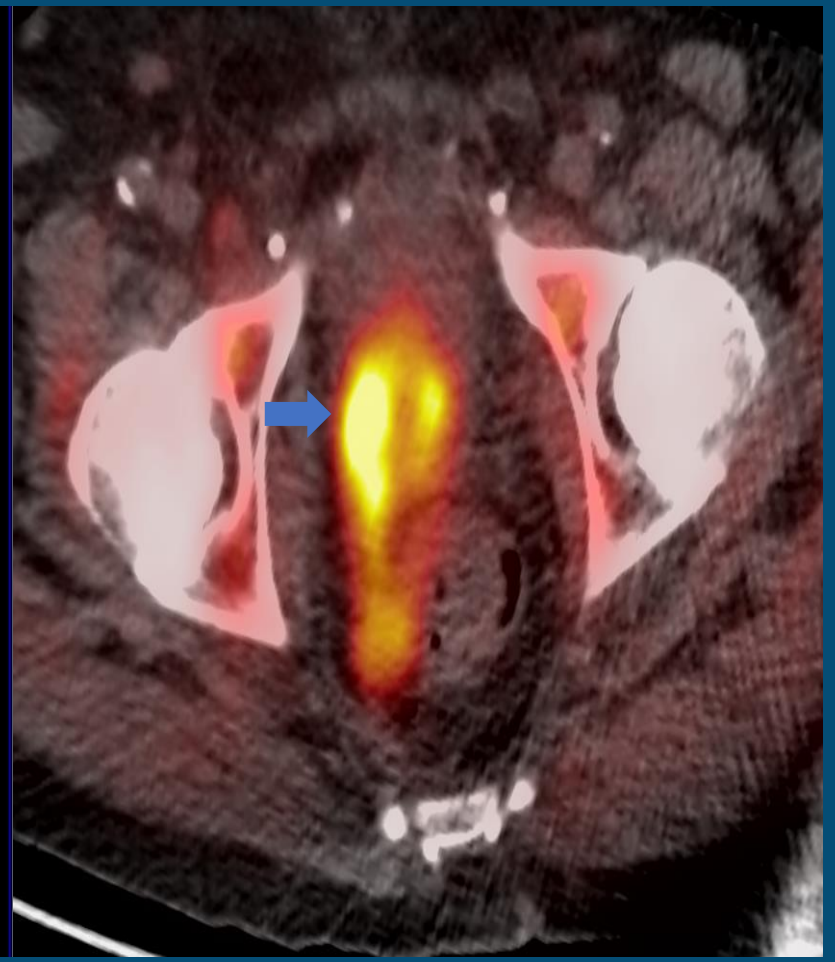


Coronal and axial non contrast CT images show multiple enlarged retroperitoneal and pelvic lymph nodes (arrows).

Axumin (18F-fluciclovine) PET Scan



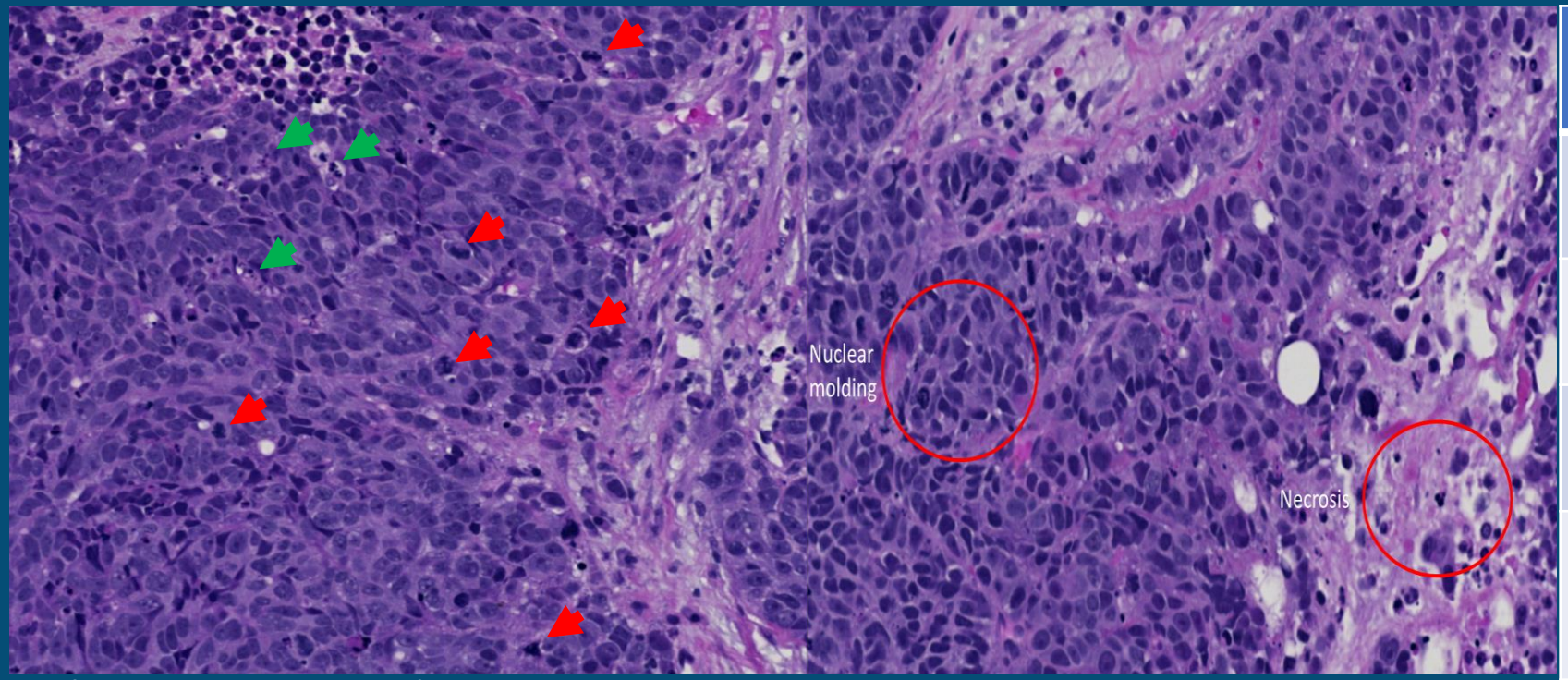




Coronal and Axial fused Axumin PET scan images demonstrate marked increased uptake in the retroperitoneal lymph nodes (arrows)

Axial fused PET Axumin scan shows marked increased activity in the right hemi prostate gland.

Core Biopsy of Lymph nodes and Prostate



Red arrow: mitosis and Green arrow: apoptosis

Final Diagnosis: High-grade, poorly-differentiated tumor demonstrating brisk mitotic activity and necrosis. Neoplastic cells are immunoreactive for chromogranin, synaptophysin, CK7, and TTF-1 (focal); while negative for PSA and PSA-P. CK20 shows rare cells positive. **Ki67 proliferation index is 90%**

Immunohistochemical profile:

Key Markers	Prostate cancer	SCC
PSA	+ve	Low to -ve
Androgen receptor	+ve	-ve
p53	+ve	-ve
TTF1	-ve	+ve
Bcl2	-ve	+ve
Ki-67	Low	High

Discussion: Small Cell Carcinoma of Prostate

- A subset of neuroendocrine cancer, small cell carcinoma of the prostate (SCCP) is a rare entity but lethal entity of prostate cancer.
- SCCP will present itself as de novo malignancy at the time of diagnosis or in the shadow of concomitant prostate adenocarcinoma (40-50%).
- Majority of patients present with metastatic disease to bones, lung, brain and lungs.
- Often the serum PSA levels are disproportionately lower to the amount of disease burden.
- Paraneoplastic syndromes of hypercalcemia, SIDH and ectopic adrenocorticotropic hormone activity.

Discussion: Role of Imaging and Management

- Fludeoxyglucose-positron-emission tomography (FDG-PET) scans have been found to be useful in SCCP in staging and treatment response.
- Conventional post contrast CT and MRI can also be used to stage and assess metastatic disease.
- Imaging plays a crucial role in detection of androgen resistant progression of prostate cancer (Neuroendocrine carcinoma)
- Platinum-based combination chemotherapy is on the front line for metastatic disease.
- Addition of ADT has variable results
- Advanced strategies, including targeted therapies combining inhibition for enhanced tumor control.

Conclusions.

- Small-cell carcinoma (SCC) of the prostate is a rare subtype of prostate cancer characterized by an aggressive clinical course.
- Approximately 40–50% of men with prostatic SCCs have a history of conventional prostatic adenocarcinoma.
- SCC of the prostate is usually not responsive to androgen deprivation and disease progression is not associated with rises in serum PSA levels.
- Chemotherapy represents the backbone of management for men with advanced prostatic SCC.
- SCC is radiosensitive and radiotherapy might offer local palliation of symptoms such as bladder outlet obstruction and pain.

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Thank you