INTERESTING CASE PRESENTATION

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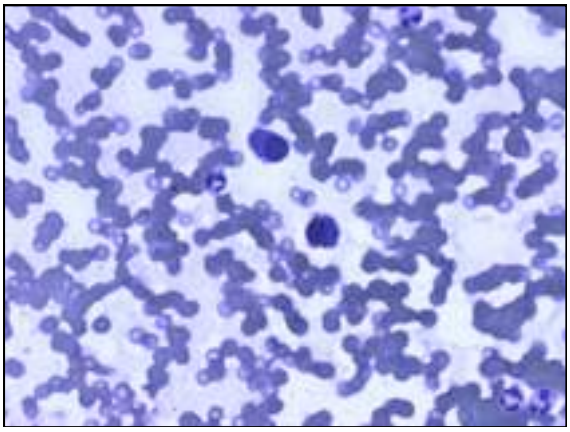
- 57 y/o male from Dominican Republic presented with Levaquin resistant Pseudomonas UTI, was started on antibiotics
- Non-smoker, social drinker
- Past history: Hypo echogenic mass in the right postero-lateral wall of the bladder (Transrectal USG)
- Pathology: High grade urothelial carcinoma
- Underwent partial cystectomy
- Follow up: No gross hematuria or irritative symptoms

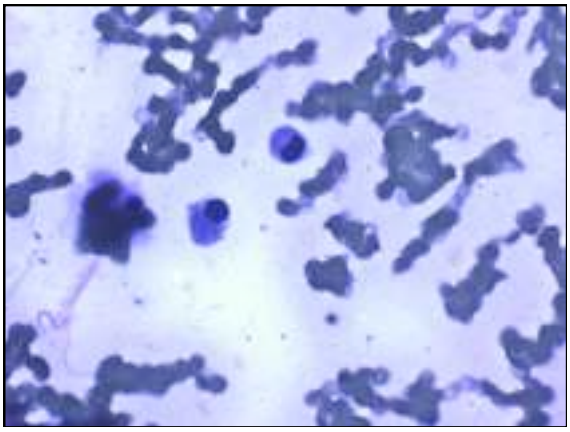
FOLLOW UP

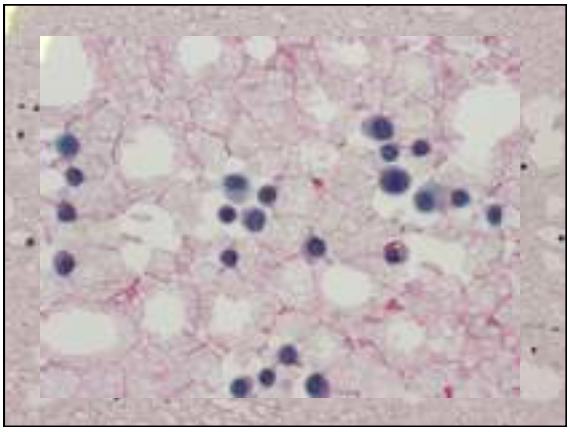
- CT imaging: Diffuse bladder thickening and surrounding peritoneal thickening. Possible focal mass on the anterior wall of the bladder. D/D recurrent bladder carcinoma vs post surgical changes
- Follow up cystoscopy: No obvious mass and multiple foreign bodies appearing to be chronic sutures.
- Corresponding biopsies and urine cytology were negative.
- Follow up cystoscopies: Negative

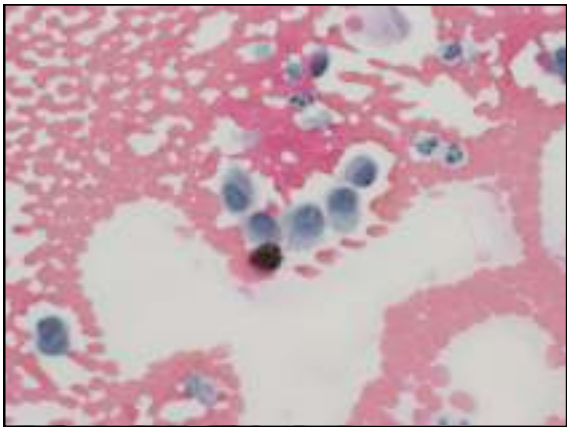
FOLLOW UP (contd.)

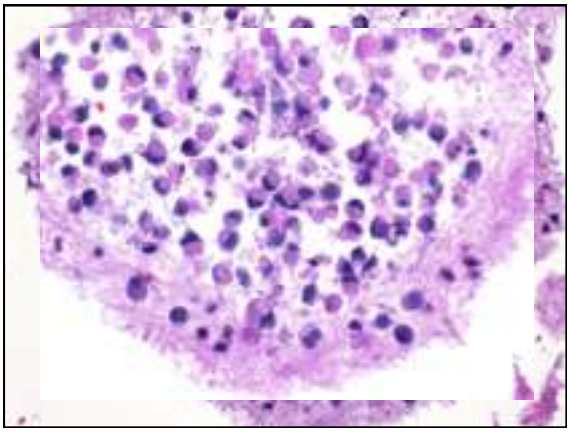
- Follow up CT 2 years later showed extensive abdomino-pelvic lymphadenopathy
- The left lateral 2.5 cm para aortic lymph node was biopsied.
- Following that, the patient also presented with bilateral pleural effusions





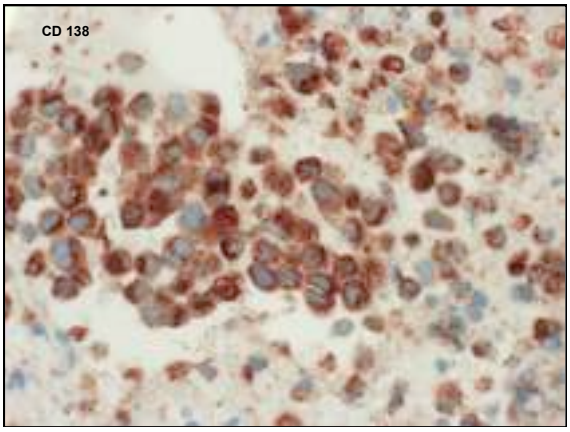


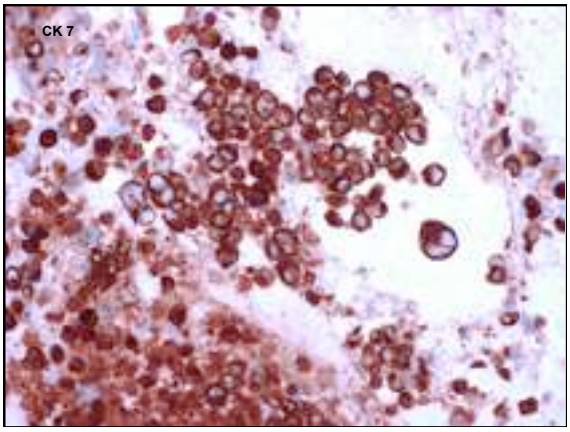


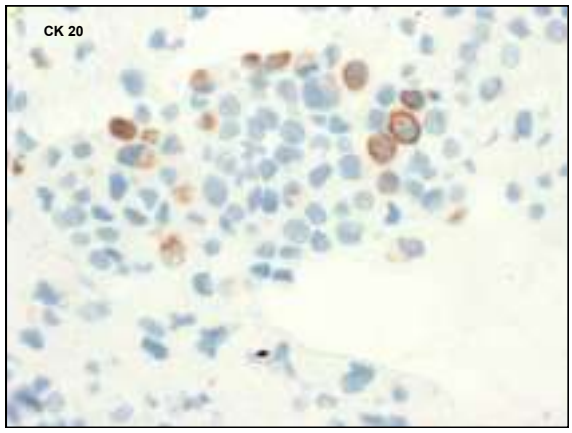


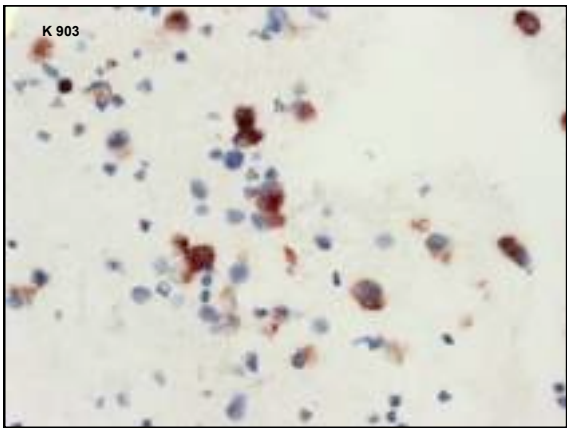
Differential diagnosis

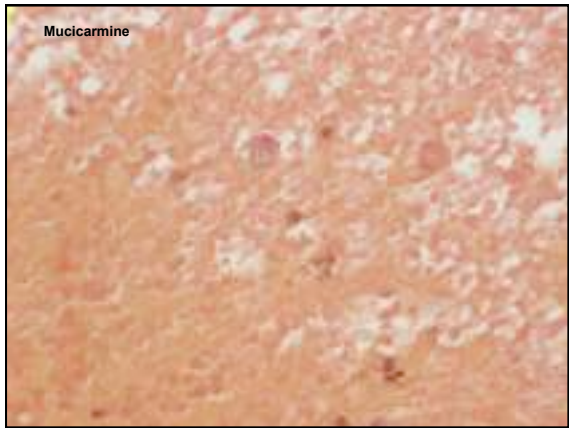
- Metastatic urothelial carcinoma
- Plasmacytoma/plasma cell myeloma
- Melanoma
- Metastatic carcinoma
- Rhabdomyosarcoma



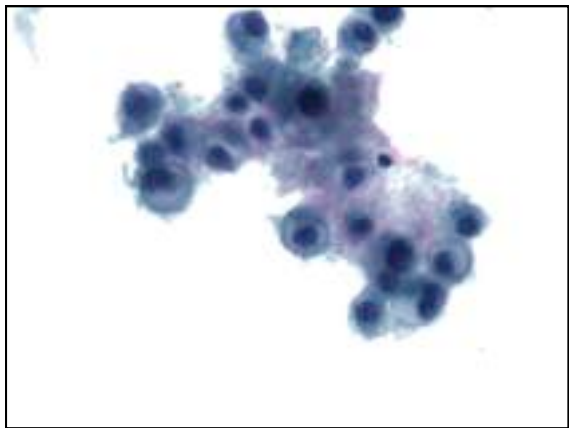


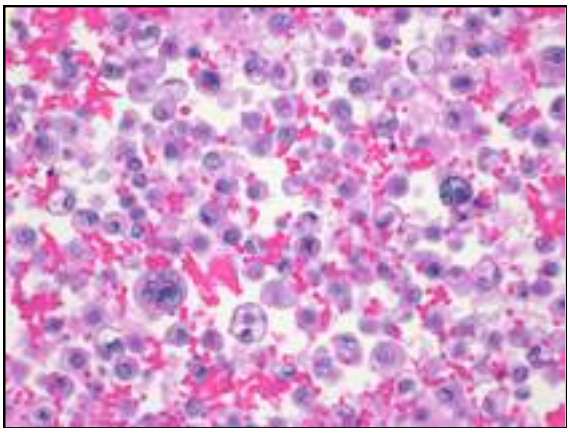


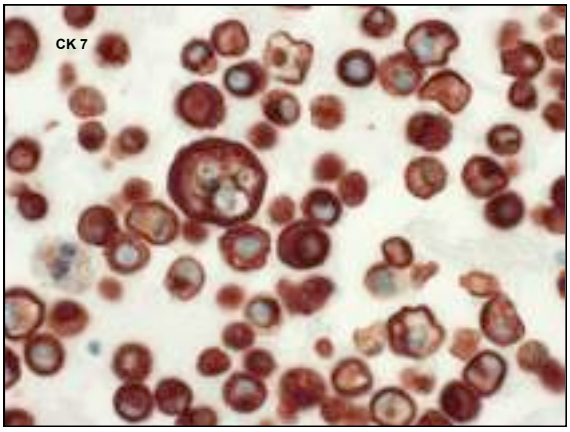


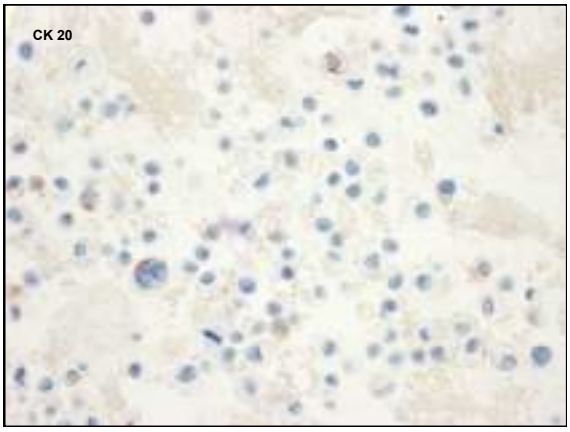


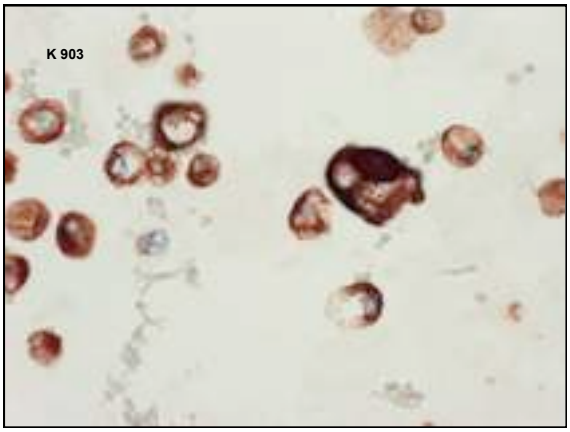
Lymph node, left retroperitoneal, 2.5 cm, fine needle aspiration:
Metastatic high grade urothelial carcinoma with plasmacytoid and signet ring cell features











PLEURAL FLUID, RIGHT:
HIGH GRADE CARCINOMA CONSISTENT WITH A UROTHELIAL PRIMARY

PLASMACYTOID UROTHELIAL CARCINOMA

PLASMACYTOID UROTHELIAL CARCINOMA

- Rare variant of urothelial carcinoma, ~ 0.5 to 2.7% of all invasive urothelial carcinomas.
- Recognized by the WHO 2004 classification of urothelial tumors as one of the thirteen variants of urothelial carcinoma.

CLINICAL PRESENTATION AND PROGNOSIS

- Voiding irritation, frequent micturition
- Gross or microscopic hematuria is fairly uncommon
- Usually presents at late stage with metastases
- 60% cases show distant metastases at presentation
- M:F is 2:1, mean age at presentation is ~ 58 years (54-73 yrs)
- Nigwekar et al- No patient with greater than 1 year follow up survived the disease.
- Lopez-Beltran et al-all patients died of cancer or had metastases.

CYTOMORPHOLOGICAL FEATURES

- Medium sized dyshesive tumor cells with hyperchromatic, eccentrically placed nuclei, abundant eosinophilic cytoplasm and increased mitoses.
- Cords, nests, single file or with sheet like growth. Occasional cases of in-situ only lesion have been reported.
- Focal evidence of conventional high grade urothelial carcinoma or CIS is present.
- Common presentations include bladder wall thickening with induration, sessile broad based lesions, and occasionally a mass like lesion.

IMMUNOHISTOCHEMICAL FINDINGS

- Strong cytoplasmic and membranous staining to CK7, CK8, CK18, CK19, 34β E12, EMA, CD15, GATA-3, CK AE1/AE3, CAM 5.2, pan CK and +/- CK20.
- Immunoreactivity to CD138 (plasma cell marker) in approximately 78% of cases
- Negative for LCA, CD20, kappa, lambda, CD56, synaptophysin, chromogranin and Ecadherin.

DIAGNOSTIC PITFALLS

- Relative lack of hematuria in most cases
- Lack of grossly identifiable tumor despite higher muscle invasive stage
- Plasmacytoid appearance- big mimicker
- CD138 immunostain positivity
- Lytic lesions in the bone may be an initial presentation, raising the possibility of a multiple myeloma

DIFFERENTIAL DIAGNOSIS

- EXTRAMEDULLARY PLASMACYTOMA
- MULTIPLE MYELOMA
- MELANOMA
- METASTATIC DIFFUSE TYPE GASTRIC CARCINOMA
- RHABDOMYOSARCOMA
- NEUROENDOCRINE NEOPLASMS

FOCAL PRESENCE OF CIS OR CONVENTIONAL HIGH GRADE UROTHELIAL CARCINOMA ELSEWHERE IN THE TUMOR

- Plasmacytoma/ plasma cell myeloma: Presence of CK positive cells, lack of monoclonal kappa or lambda light chains
- Melanoma: Presence of CK positive cells, lack of staining for melanoma markers (HMB45, S100 and MART-1)
- Diffuse type gastric carcinoma: Also E-cadherin negative, CDX-2 positive, CK7+CK20- (40% cases), CK7-CK20+ (35% cases).
- Rhabdomyosarcoma: CK negative, positive for skeletal muscle markers (desmin, myogenin)
- Neuroendocrine neoplasms: Positive for neuroendocrine markers (CD56, synaptophysin, chromogranin)

MANAGEMENT

- RADICAL CYSTECTOMY- FIRST CHOICE FOR INVASIVE AND NON-INVASIVE TUMORS
- ADJUVANT AND NEO-ADJUVANT CHEMOTHERAPY TO REDUCE RISK OF SYSTEMIC PROGESSION, MAY OFFER SOME BENEFIT IN PROLONGING SURVIVAL
- SENSITIVE TO RADIOTHERAPY
- LOW STAGE TUMORS HAVE PROLONGED SURVIVAL AND BETTER OUTCOME

E-CADHERIN IMMUNOSTAIN

- Loss of E-Cadherin expression associated with loss of differentiation and increased invasiveness
- May correlate with the muscle involvement and higher stage of presentation
- Resembles E-cadherin negative malignancies such as diffuse-type gastric cancer and lobular carcinoma of the breast
- E-cadherin loss related to the dyshesive nature of the tumor cells
- Future directions: E-cadherin loss related molecular pathways.

KEY POINTERS

- RARE, AGGRESSIVE VARIANT OF UROTHELIAL CARCINOMA.
- PATIENTS USUALLY PRESENT AT LATE STAGE
- MUSCLE INVASIVE AND LACKS AN OBVIOUS MASS IN MANY CASES.
- MAY PRESENT IN DIVERSE LOCATIONS DUE TO THE METASTATIC POTENTIAL.
- LYTIC LESIONS IN BONE, A FAIRLY COMMON INITIAL PRESENTATION
- POSITIVE STAINING FOR CD 138-UNIQUE FEATURE
- A FULL PANEL OF IMMUNOSTAINS CRUCIAL IN DIAGNOSIS

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