AMSER Case of the Month October 2025

76-year-old male with thigh mass and hematuria

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Patient Presentation

- 76-year-old male with past medical history of atrial fibrillation with RVR and non-Hodgkin's lymphoma.
- Reported in remission for 12 years (pathology proven diffuse large B-cell lymphoma on 04/12/2012).
- Now presenting for right thigh abscess and hematuria.

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Pertinent Labs

- Urinalysis
  - Appearance: turbid
  - Gravity: 1.035
  - Protein: trace
  - Ketones: trace
  - RBC: 5-10
- BMP
  - Alkaline phosphatase: 132
  - AST: 37
  - ALT: 24
  - Lipase: 12
  - Lactic acid: 3.5
- CBC
  - WBC: 11.53
  - RBC: 2.59
  - Hgb: 7.9
  - Hct: 25.1
  - Neutrophils: 90%
  - Bands: 4%
  - Lymphocytes: 4%
  - Monocytes: 2%
  - Eosinophils: 0%
  - Basophils: 0%

What imaging should be performed for the evaluation of hematuria?

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Select the applicable ACR Appropriateness Criteria

Variant 4: **Gross hematuria. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
CTU without and with IV contrast	Usually Appropriate	☢☢☢☢
MRU without and with IV contrast	Usually Appropriate	O
CT abdomen and pelvis without and with IV contrast	May Be Appropriate	☢☢☢☢
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate	O
MRI abdomen and pelvis without IV contrast	May Be Appropriate	O
US kidneys and bladder retroperitoneal	May Be Appropriate	O
CT abdomen and pelvis with IV contrast	May Be Appropriate	☢☢☢
CT abdomen and pelvis without IV contrast	May Be Appropriate	☢☢☢
Radiography abdomen and pelvis	Usually Not Appropriate	☢☢
Arteriography kidney	Usually Not Appropriate	☢☢☢
Radiography intravenous urography	Usually Not Appropriate	☢☢☢

This imaging modality was ordered

Findings

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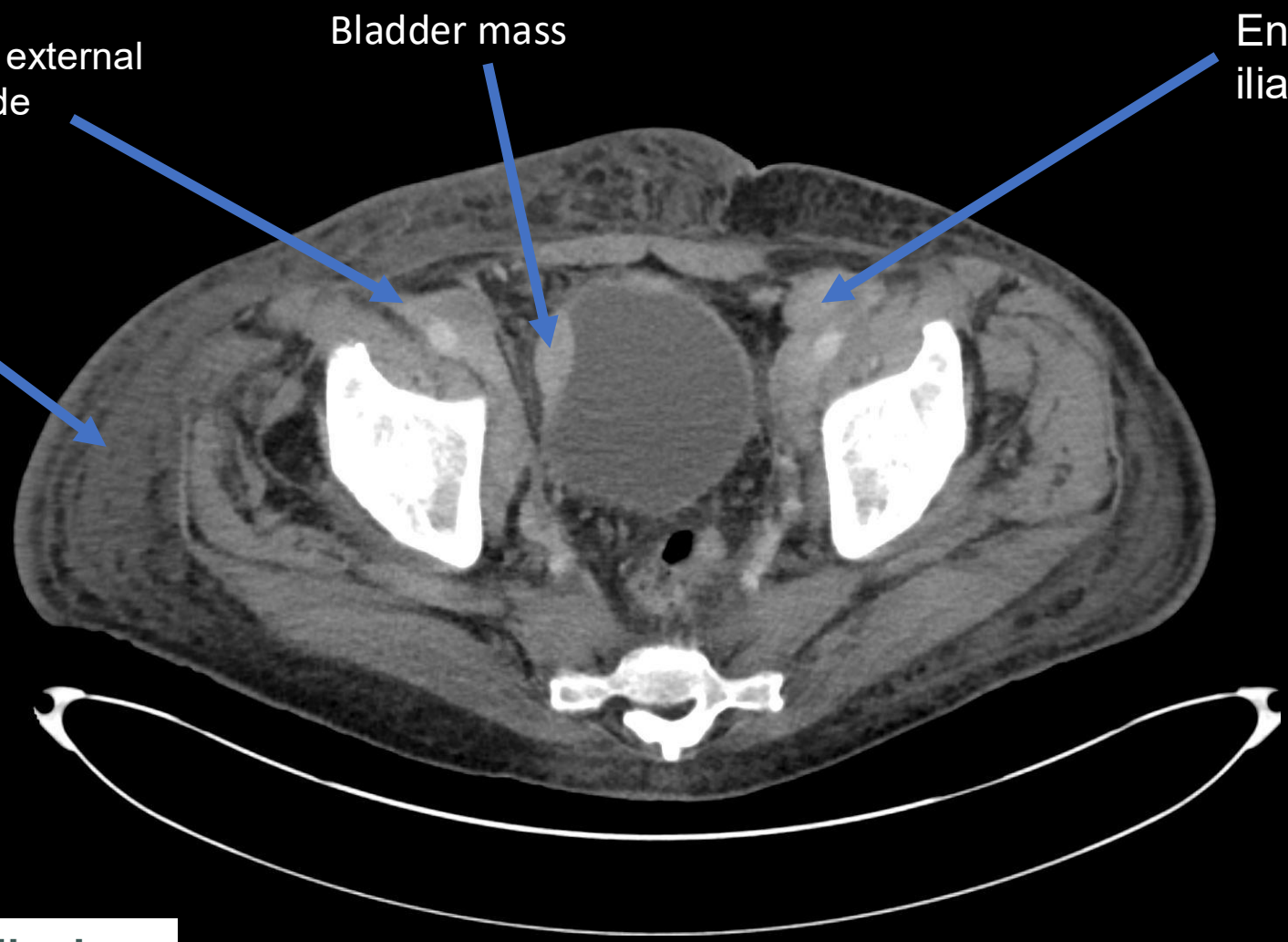
Findings



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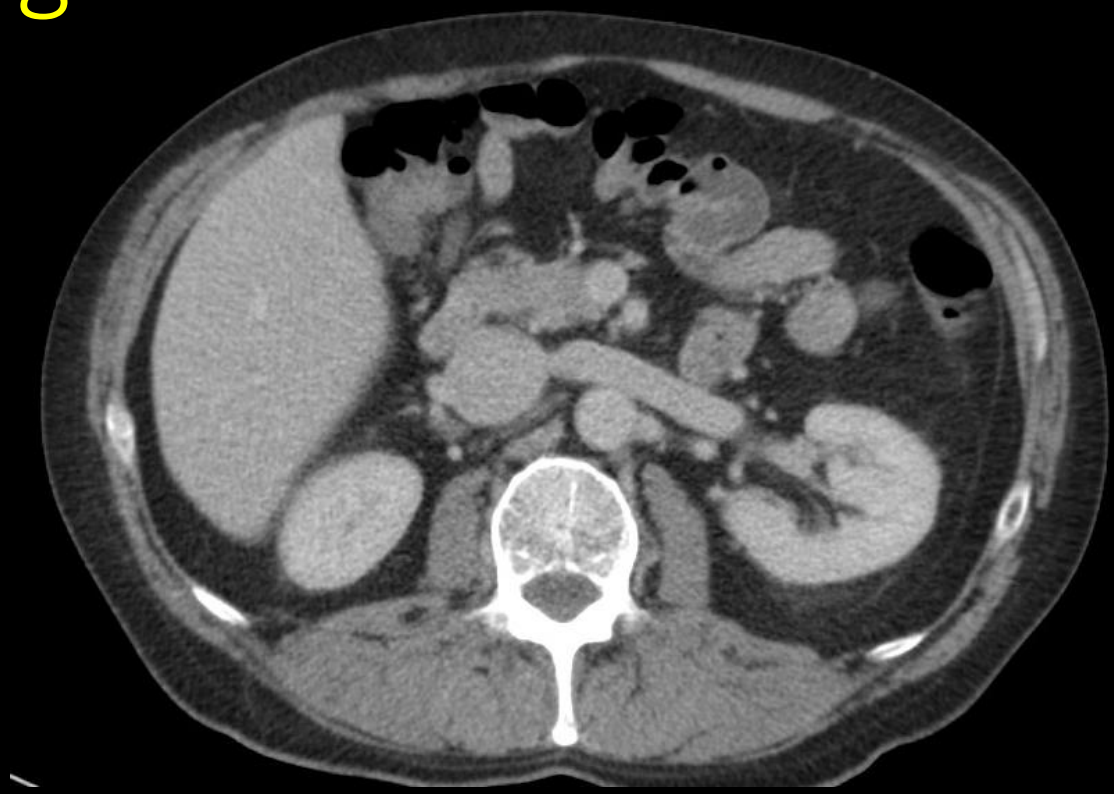
Findings

Current CT



Prior CT

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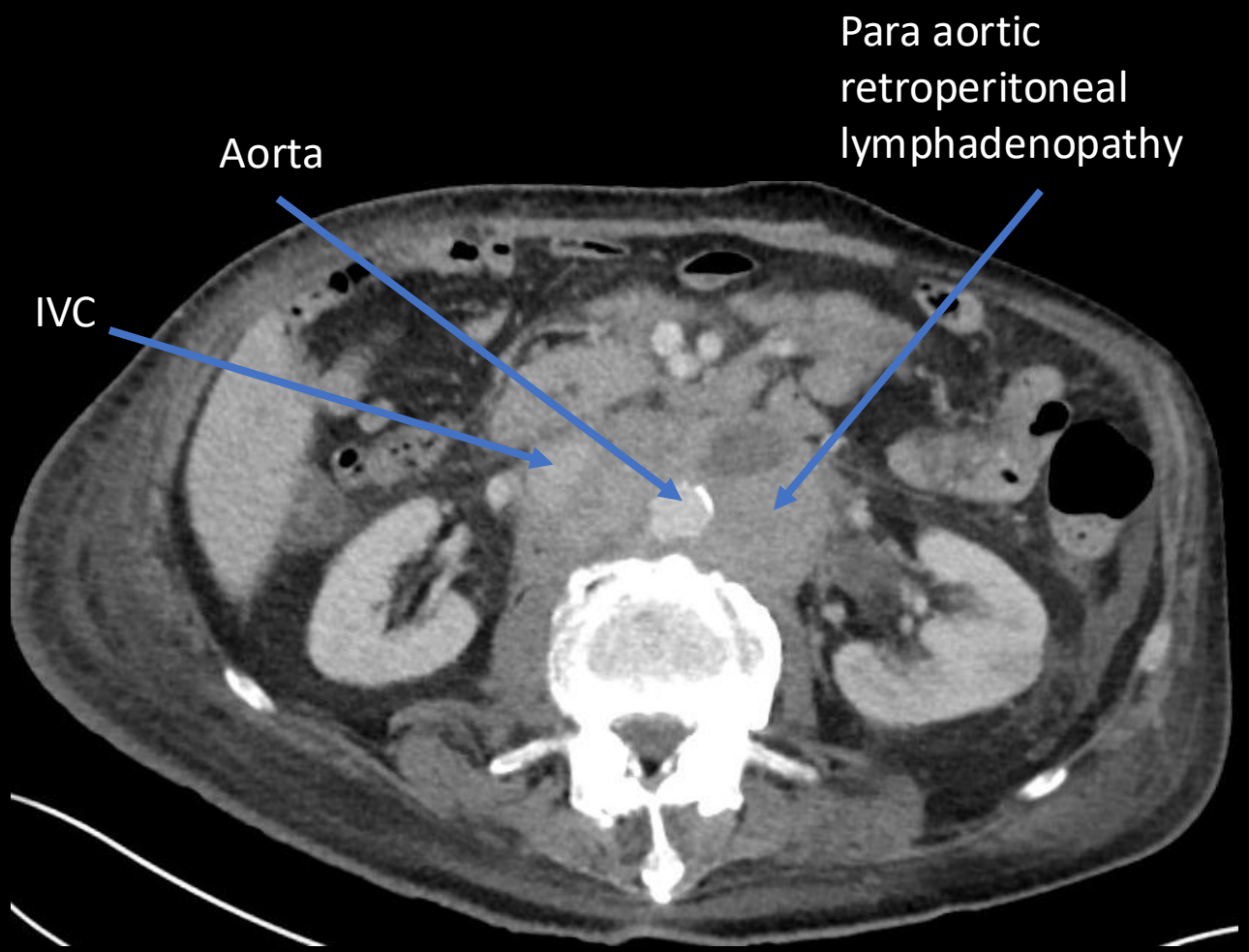

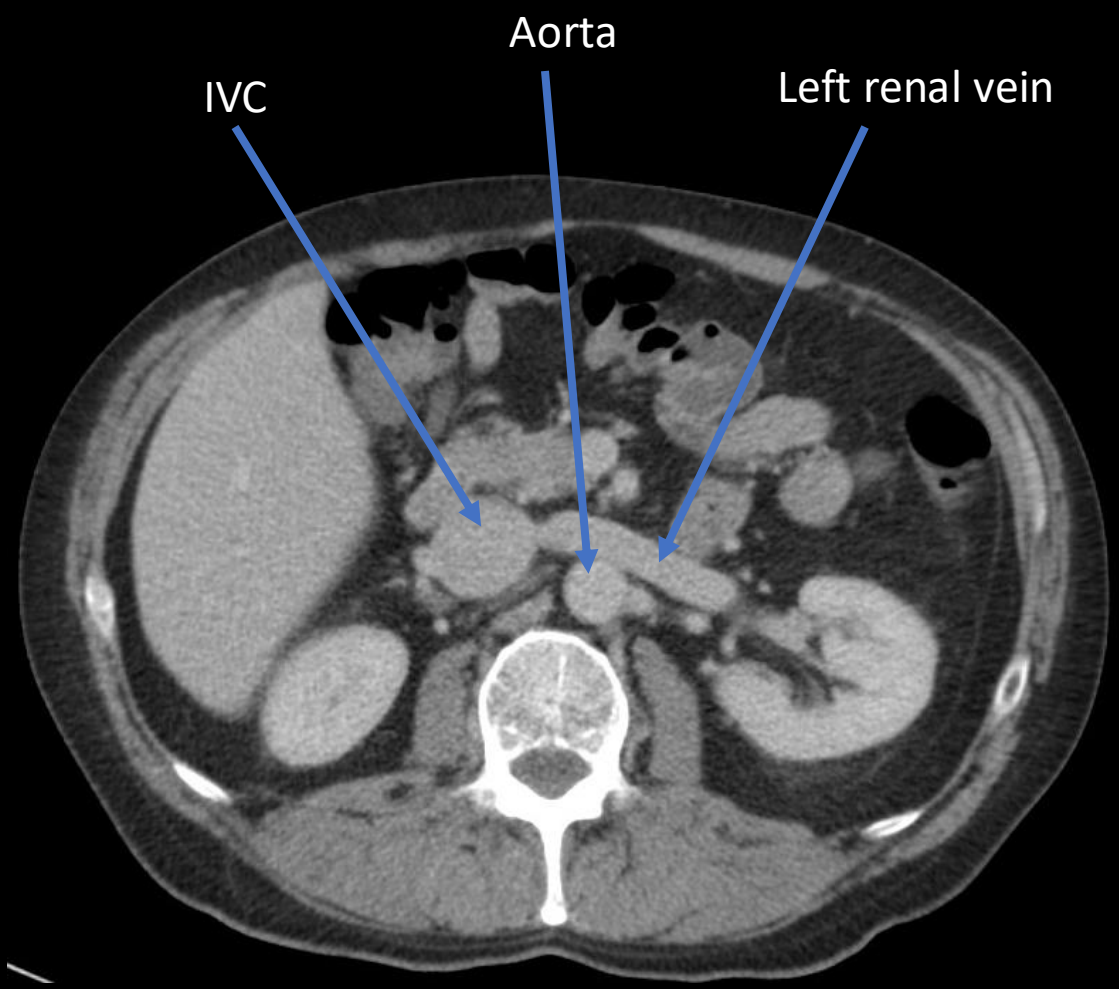

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Final Dx:

- Diffuse large B-cell lymphoma (DLBCL) of the bladder
- Bladder biopsy:
  - Dense infiltrate of atypical large and small lymphoid cells within the bladder mucosa and submucosa.
  - Immunohistochemical staining:
    - CD20, PAX5, and CD10 positive
    - CD5 negative
    - High Ki-67 proliferation index
- Additional adenopathy presumably relates to lymphoma

Case Discussion

- Non-Hodgkin lymphomas (NHL) are the most common type of lymphomas, with DLBCL making up 30-40% of NHL.[1]
- NHL can develop in non-lymphoid tissue, with extranodal lymphomas making up 25-35% of all NHLs.[1]
- Primary bladder lymphomas are extremely rare and represent less than 0.2% of all extranodal NHL and less than 1% of all bladder neoplasms.[1]
- Secondary involvement of bladder lymphomas are more common and represent 10-20% of NHL.[1]
- Urinary tract DLBCL carries worse prognosis than nodal DLBCL in both early and advanced disease stages.[1]
- Poor prognostic factors include DLBCL histology, male gender, and older age.[1]

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Case Discussion Cont.

- Primary urinary bladder lymphoma often presents with nonspecific lower urinary tract symptoms.[4]
- These symptoms can be mistaken for more common conditions (urinary tract infection or urothelial carcinoma), leading to a delay in diagnosis and treatment. [4]
- Radiologic findings. [2]
  - Ultrasound Findings:
    - Solid, homogeneous mural mass.
  - CT Scan Findings:
    - Soft-tissue density mural mass.
    - Enhances with IV contrast administration.
- Imaging is useful for assessing tumor size and location. However, it cannot reliably distinguish between different malignancy types. [2]

Case Discussion Cont.

- Cystoscopy with Biopsy [2]
  - Essential for definitive diagnosis and allows for histopathology and immunohistochemical (IHC) analysis.
  - IHC markers for B-cell Lymphomas:
    - Commonly positive: CD19, CD20, CD21.
    - High-grade lymphomas: CD3, CD20.
    - Low-grade lymphomas: CD20, CD21, CD43.
- Additional Workup for High-Grade Tumors [2]
  - Bone marrow biopsy and PET scan to rule out systemic or extranodal involvement.

Case Discussion Cont.

- Use of chemo-immunotherapy, the R-CHOP regimen (rituximab, cyclophosphamide, doxorubicin, vincristine, prednisone) is the mainstay nodal and extranodal DLBCL treatment.[1]
- Although patient with nodal DLBCL benefitted from radiation therapy, urinary tract-DLBCL had no survival benefit. [2]
- Surgery resulted in being beneficial for kidney DLBCL. However, no benefit was seen with urinary bladder-DLBCL.[3]
- Due to the rarity of urinary tract-DLBCL further studies are indicated to better define diagnostic approach and treatment options.

References:

1. Armitage JO. How I treat patients with diffuse large B-cell lymphoma. Blood. 2007 Jul 1;110(1):29-36. doi: 10.1182/blood-2007-01-041871. Epub 2007 Mar 14. PMID: 17360935.
2. Sain B, Blake M, Goyal K, Kaur H, Robinson K. Epstein-Barr virus-positive primary diffuse large B-cell lymphoma of the urinary bladder: a case report. J Surg Case Rep. 2023 Mar 9;2023(3):rjad111. doi: 10.1093/jscr/rjad111. PMID: 36908691; PMCID: PMC9997550.
3. Sehn, Laurie H., and Gilles Salles. "Diffuse large B-cell lymphoma." New England Journal of Medicine 384.9 (2021): 842-858.
4. Zanelli M, Sanguedolce F, Zizzo M, Palicelli A, Pellegrini D, Farinacci S, Soriano A, Froio E, Cormio L, Carrieri G, et al. Primary Diffuse Large B-Cell Lymphoma of the Urinary Bladder: Update on a Rare Disease and Potential Diagnostic Pitfalls. *Current Oncology*. 2022; 29(2):956-968. https://doi.org/10.3390/curroncol29020081