



Introduction

- ❖ Catheter related bloodstream infections (CRBSI) lead to increased health care costs, prolonged hospital stays, and increased mortality; consequently, prompt empiric antibiotic therapy is warranted, based on most likely organism, and clinical picture.

Case Presentation

- ❖ 54 yo F with past medical history of dialysis-dependent ESRD, ADPKD, and HTN, who presented with a 4-day history of fever, chills, weakness, myalgias, and pain in the RUE.
- ❖ Due to her symptoms, with new onset cough, headache, and neck pain, she presented to the ED.
- ❖ Upon evaluation in the ED she was found to be afebrile, tachycardic at 110bpm, blood pressure 144/75mmhg, respiratory rate of 18bpm, and oxygen saturation of 98% on room air.
- ❖ Chest radiograph (Image A) revealed a right subclavian vein HD catheter.

Hospital Course

- ❖ CT C/A/P w/ contrast demonstrated multifocal areas of ill-defined opacity present within the lung fields, concerning for acute vs. atypical PNA (Image B and C). New small bilateral pleural effusions were present.
- ❖ Vascular RUE duplex ultrasound was positive for DVT involving the right IJ vein (Image D).
- ❖ Initial blood cultures resulted with growth of methicillin sensitive Staphylococcal aureus (MSSA) (Image E) in 4/4 bottles within 24 hours.
- ❖ Right subclavian vascular catheter removed by IR, where they noted purulent drainage upon removal.
- ❖ Catheter tip culture grew MSSA within 48 hours.

Imaging

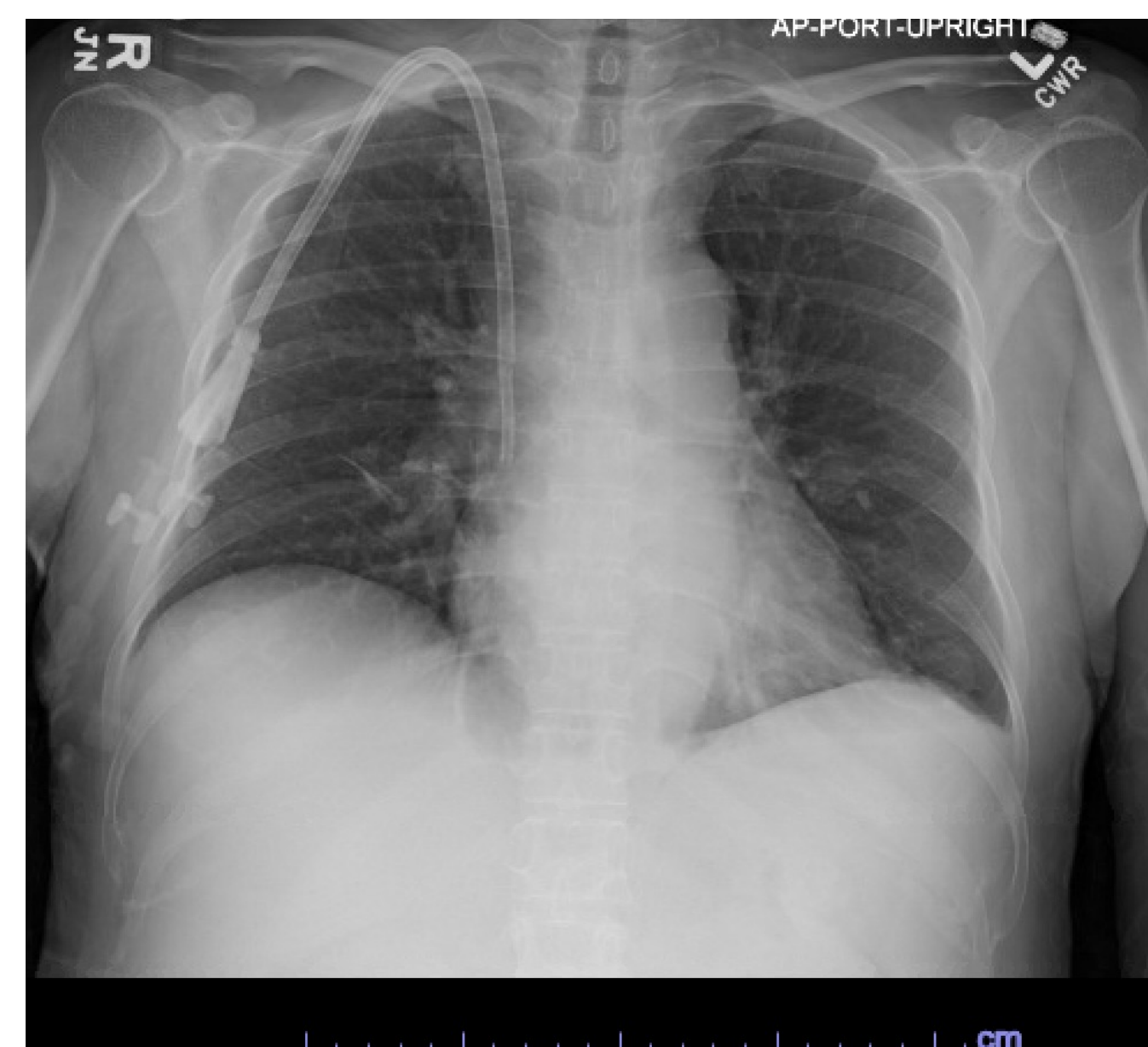


Image A: Dual lumen tunneled catheter in the right chest with the tip in the superior vena cava

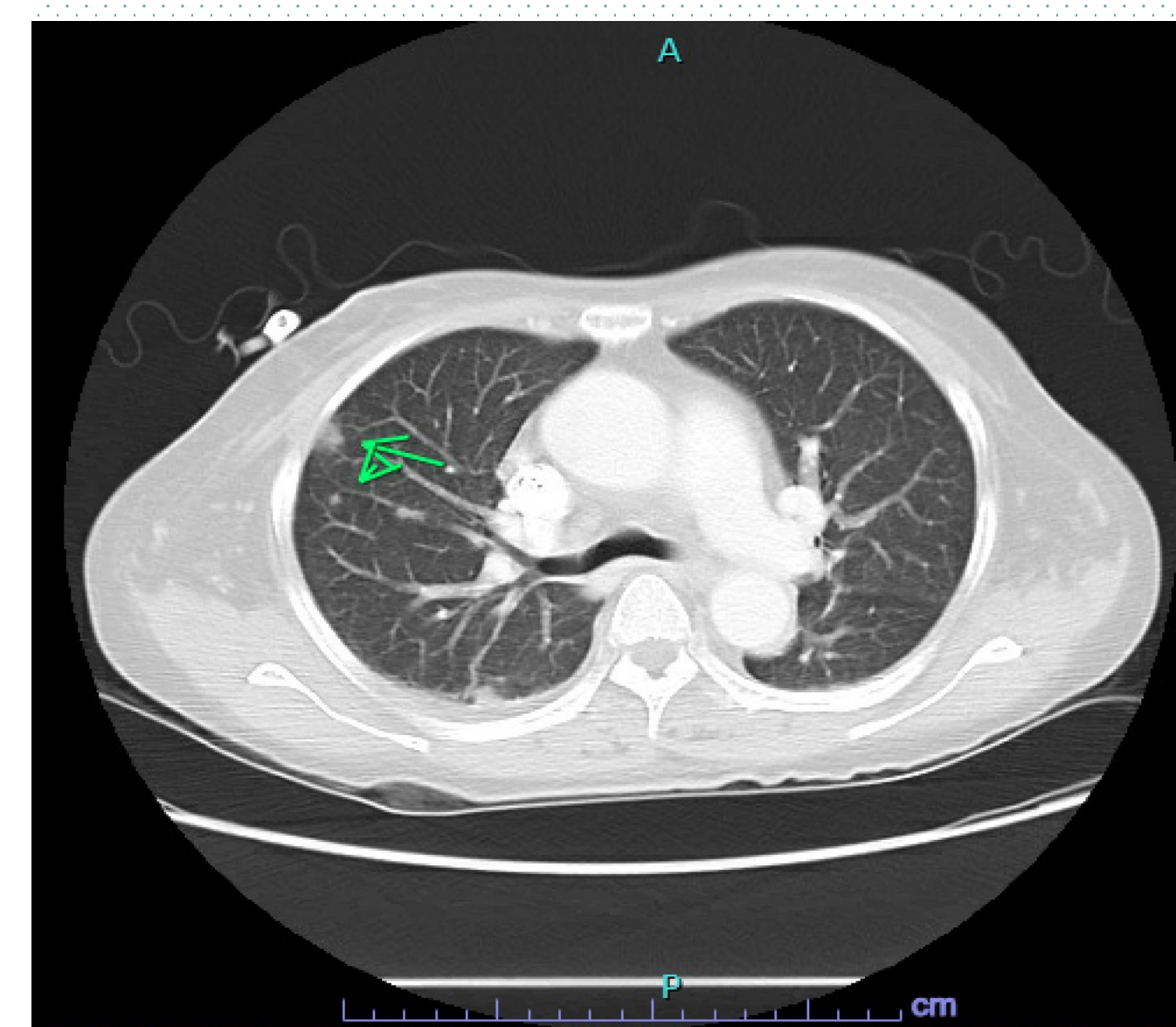


Image B: CT Chest w/ multiple ill-defined nodular opacity bilaterally concerning atypical pneumonia



Image C: CT Chest w/ multiple ill-defined nodular opacity bilaterally concerning atypical pneumonia. Largest area at left infra-hilar region of the LLL measuring between 2 & 3 cm

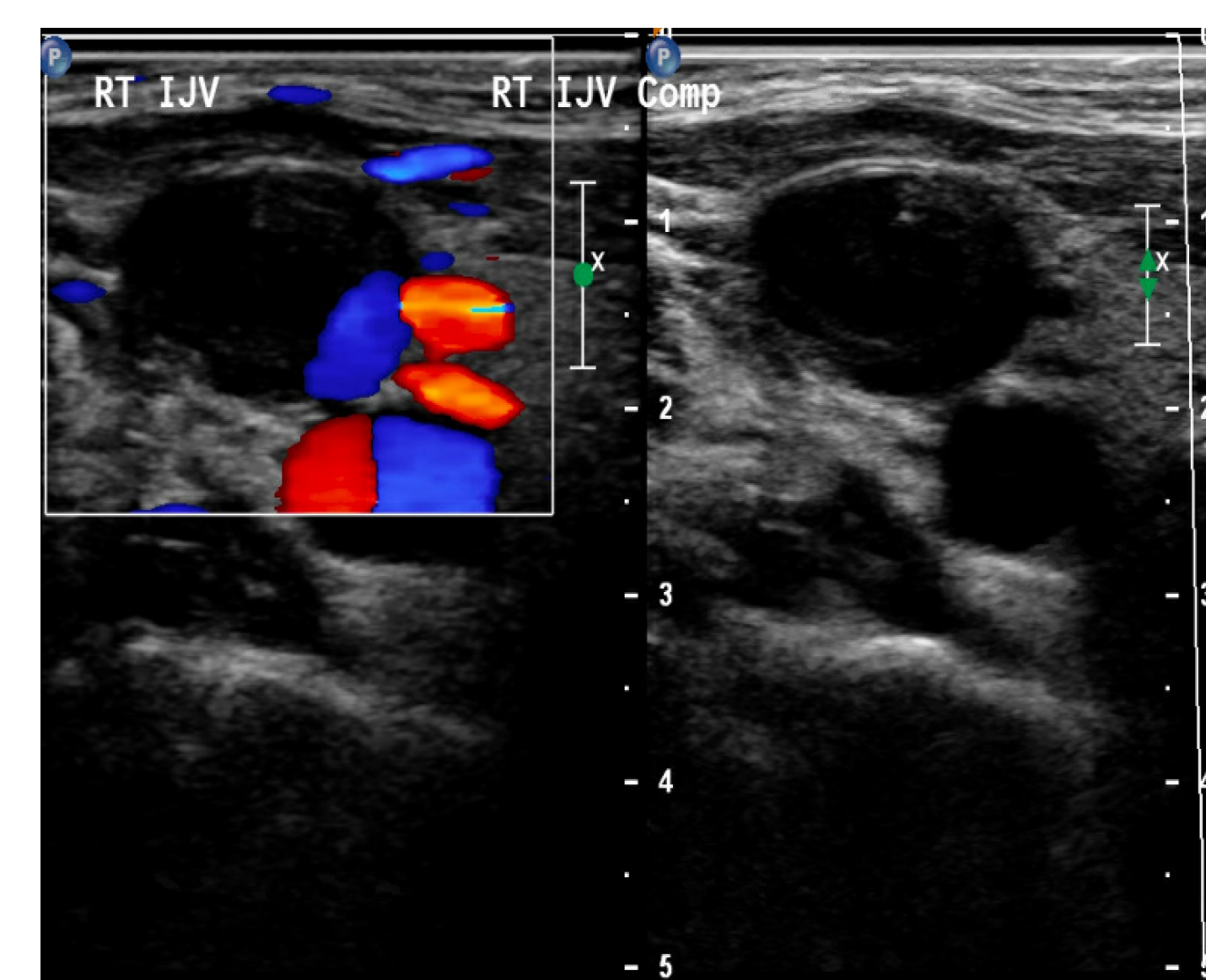


Image D: U/S RUE Positive for acute DVT involving the right IJ vein, compression view on the right

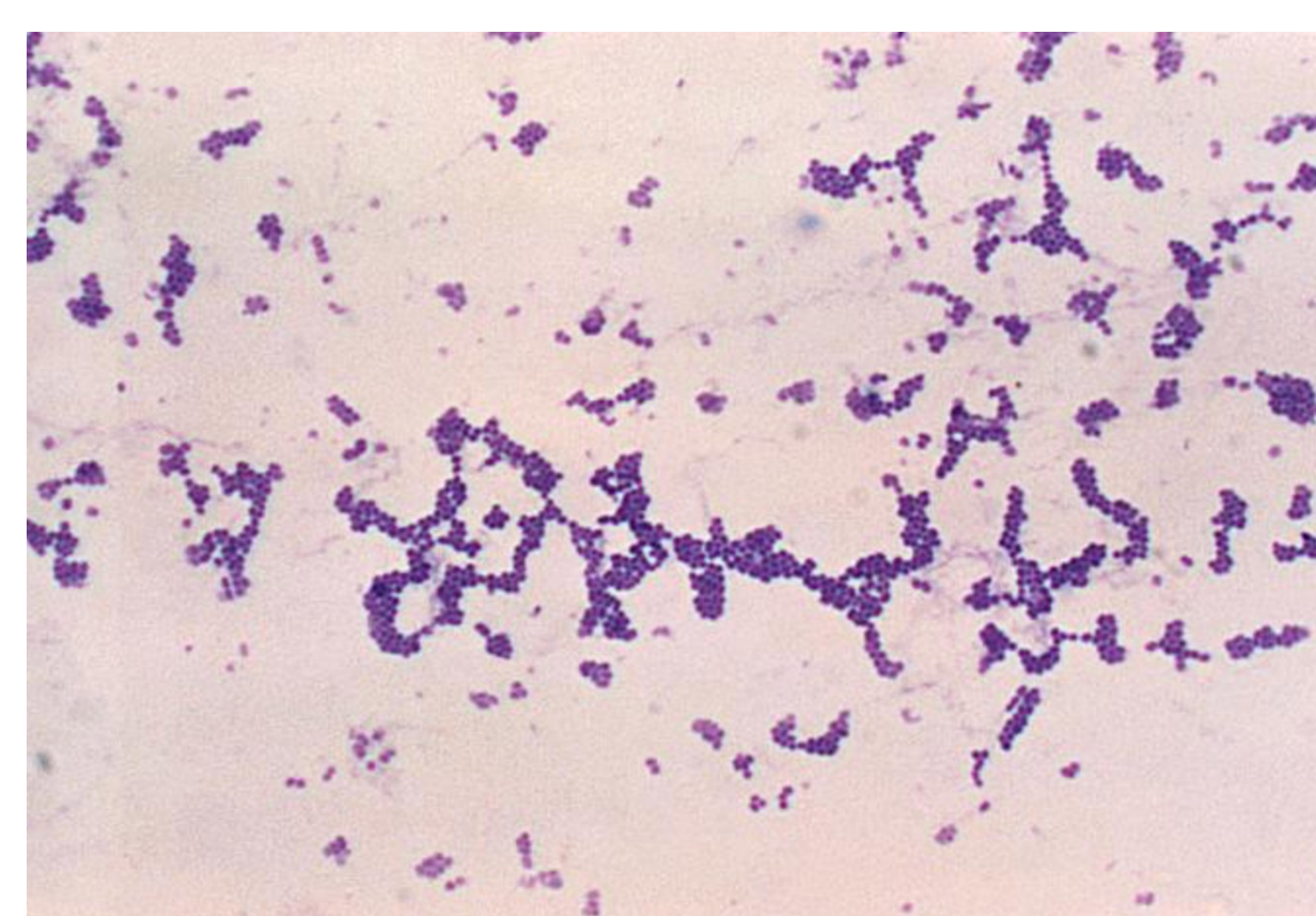


Image E: Gram Positive cocci in grape-like clusters

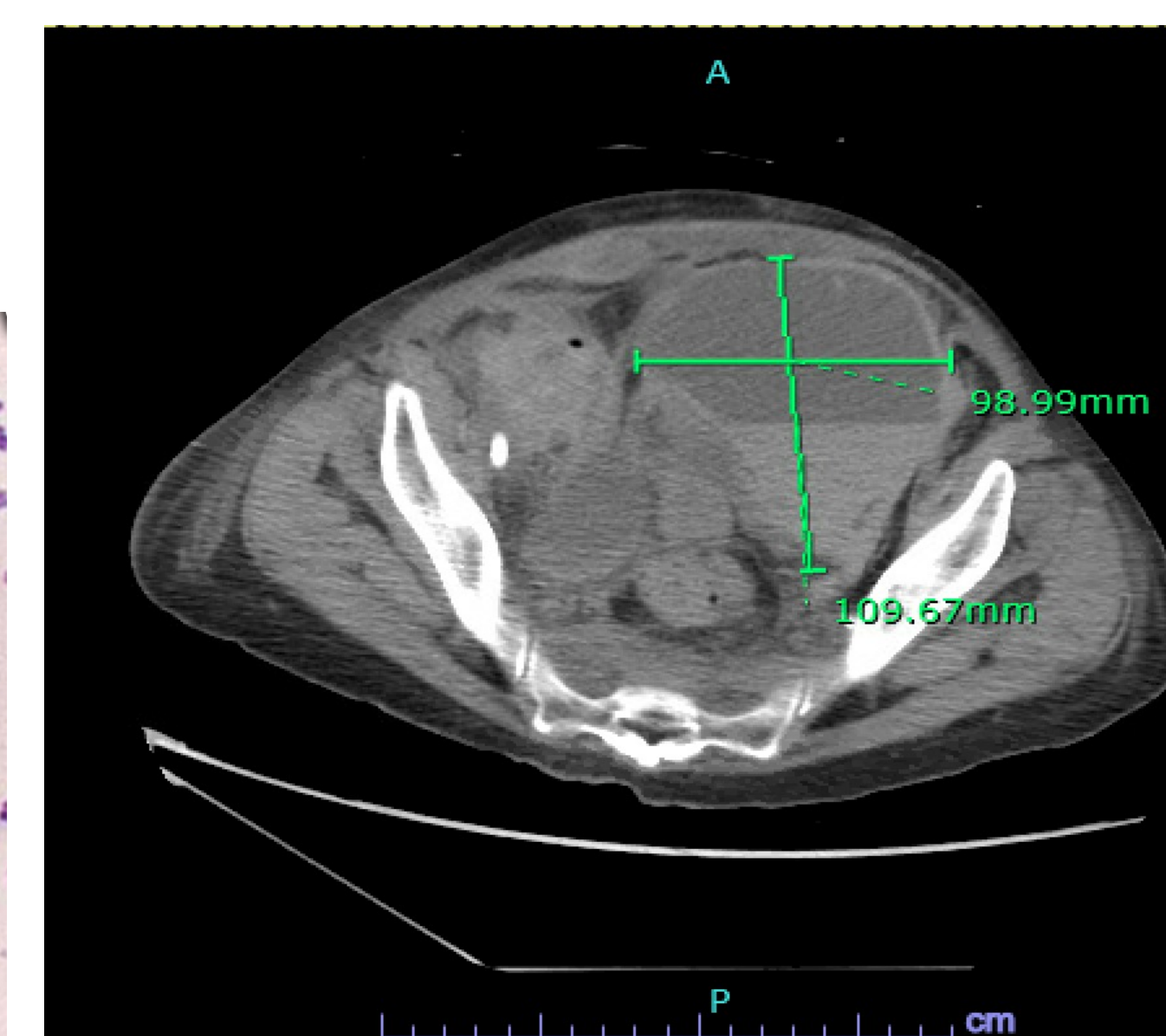


Image F: Retroperitoneal hematoma noted at the presacral and precoccygeal spaces

Hospital Course (Cont'd)

- ❖ Vascular surgery placed a temporary right femoral vein hemodialysis access catheter.
- ❖ Transesophageal echo was unrevealing for valve vegetations.
- ❖ Third set of blood cultures showed persistence of MSSA bacteremia on hospital day 5.
- ❖ Right femoral vein HD access catheter was removed due to retroperitoneal bleeding (Image F), and IR placed left IJ vein HD access catheter.
- ❖ Fourth set of blood cultures returned with no growth on hospital day 7.

Discussion

- ❖ It is estimated that 250,000 bloodstream infections occur annually, with a majority being in the setting of intravascular devices.
- ❖ Tunneled and non-tunneled vascular access catheters are prone to CRBSI, and roughly 40-80% of CRBSIs are caused by gram-positive organisms (coagulase-negative Staphylococci, Staphylococcus aureus, and Enterococcus being the most common). Methicillin-resistant staphylococcus is seen as well. Gram-negatives cause 20-30% of CRBSIs.
- ❖ Our case demonstrates the heterogeneous presentations of CRBSIs and the necessity of maintaining a high index of suspicion for central line infection in the workup of fever.

References

- ❖ Haddadin Y, Annamaraju P, Regunath H. Central Line Associated Blood Stream Infections. [Updated 2021 Aug 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK430891/>
- ❖ S. aureus gram stain: Johns Hopkins ABX Guide https://www.hopkinsguides.com/hopkins/view/Johns_Hopkins_ABX_Guide/540518/all/Staphylococcus_aureus#8.0