An interesting case of Suppurative Thrombophlebitis and Perivascular Abscesses as a Cause of Complicated MRSA Bacteremia

Ramachandran R[1], Patel, Punjan[1], Mehraban, Nasima, Yee[1], Win Leth Shwe[1], Kawam, Rayanah[1]

1. Medical City Arlington-Department of Internal Medicine

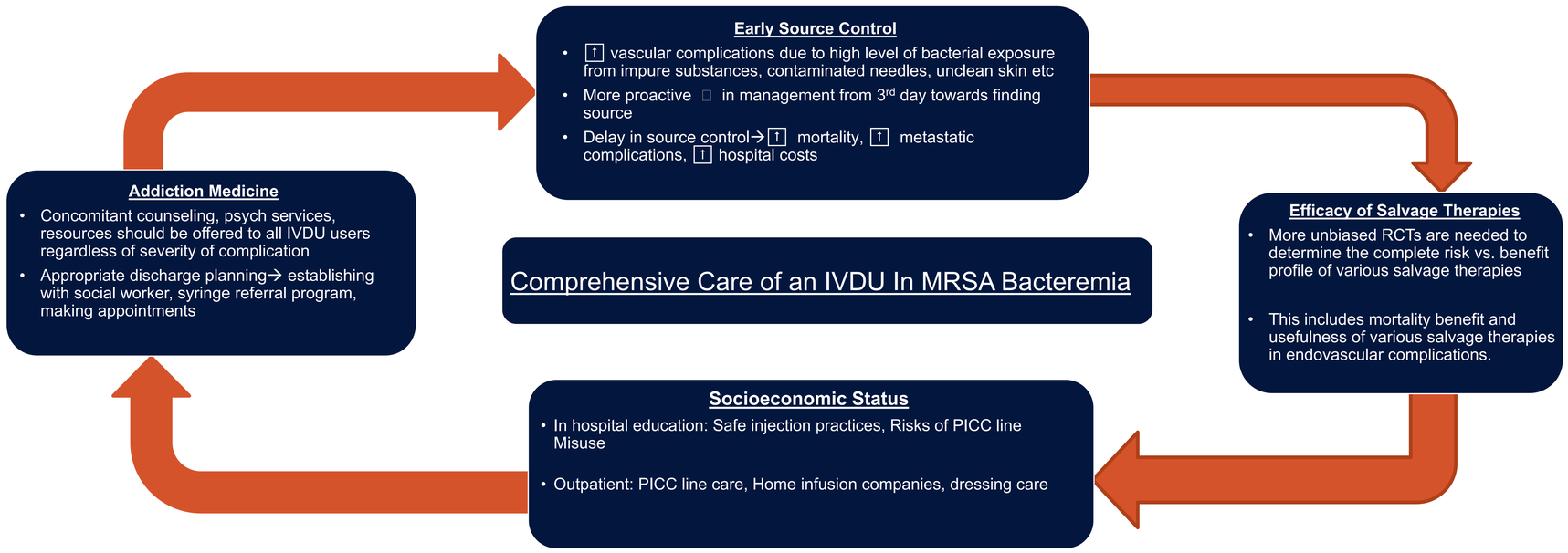
Background

- Methicillin Resistant Staphylococcus Aureus(MRSA) bacteremia has a 27% all cause mortality within 3 months.
- Nonsterile needles are major cause of local complications like soft tissue infections, leading to vascular complications such as septic thrombophlebitis, DVTs, endocarditis especially in PWID
- Increased mortality rates and increased likelihood for septic metastases for patients who continued to have persistent positive MRSA blood cultures 2nd-4th day, no defervescence of bacteremia post 72 hours of starting therapy or evidence of metastatic sites.

Case Presentation Summary

A 30-year-old female w/ pmhx of IVDU, lumbar fusion and metal rods in right ankle s/p 2011 MVA accident, p/w worsening LLE. Following the missed IV injection had progressively worsening LLE swelling and rash, not responsive to outpatient clindamycin. She also reported constant right sided chest tightness. She was admitted for sepsis secondary to complicated MRSA bacteremia due to septic thrombophlebitis and perivalvular abscess in the GSV.

Discussion



Case presentation timeline

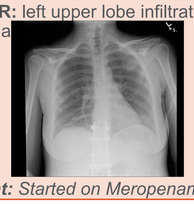
Persistent Bacteremia → **No further Bacteremia**

Day 0

Labs: BC(+) for MRSA

Imaging:

- **Fig 1: CXR:** left upper lobe infiltrate compatible w/ Pneumonia



- ***Treatment:*** *Started on Meropenam*

Days 2-4

Labs:

- UC(+), WC(+) and 48 hour repeat BC(+) for MRSA
- HIV, Treponema Palladium and Hepatitis Panels(-)
- TTE(-) for vegetations`

Imaging:

- **CT Chest w/ contrast:** Septic Emboli
- **CT Left lower extremity:** superficial venous thrombosis in GSV

Treatment:

- *Continued therapy on Vancomycin*

Days 5-7

Labs:

- BC(+) for MRSA
- Continued fevers and leukocytosis

Imaging:

- Transesophageal Echo:(-) for Endocarditis

Days 7-10

Labs: BC(+) for MRSA

Treatment:

- Switched abx to Ceftaroline and Daptomycin
- Podiatry: Bedside incision and drainage of 8 small subcutaneous abscess of left foot.

Day 11

Treatment

- Excision of Left Greater Saphenous Vein-Noted to be Necrotic and pus around GSV
- I&D of left medial thigh abscess
- Ceftaroline stopped, PICC placed, Daptomycin continued.
- Recommended IV Daptomycin for 6 weeks

Labs:

- BC post excision and I&D(-) for MRSA

Patient left AMA after receiving approximately 5 weeks or 33 days or IV Daptomycin

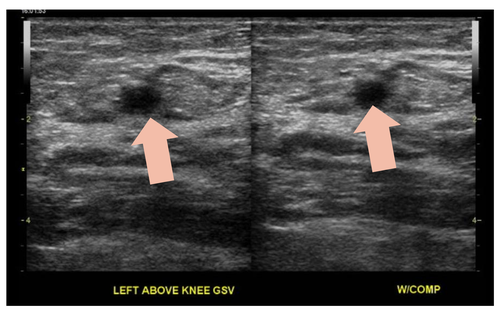


FIG. 2: Venous duplex U/S LLE– showing incompressible GSV-indicative of superficial venous thrombosis

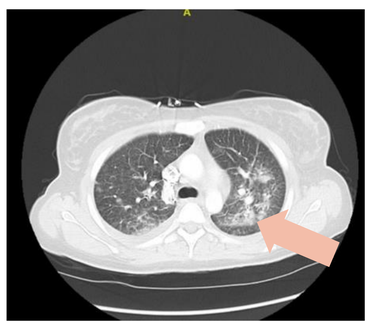


FIG. 3: CT chest w/ contract: B/l diffuse airspace consolidation & multiple b/l centrally cavitating nodules and infiltrates concerning for septic emboli

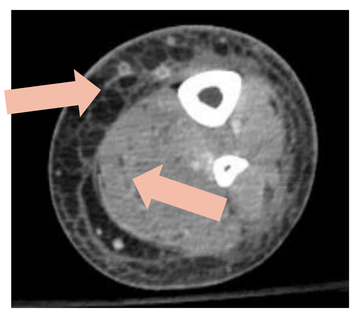


Figure 4: CT LLE(Axial view) Fat stranding(top left arrow) and unorganized fluid collection(bottom right arrow)

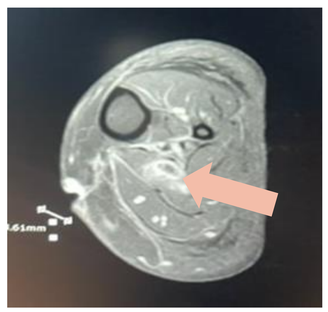


FIG. 5: MRI LLE(Axial view): Multiple subcutaneous abscess, intramuscular abscess, and myositis of soleus muscle.

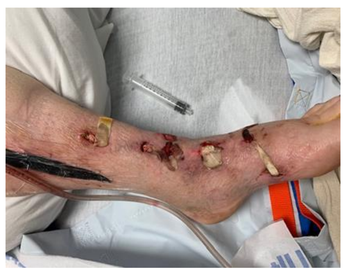


Figure 6: After I&D of multiple abscesses and excision of Left GSV w/ wound VAC and wound packing of left lower extremity.

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References

1) Bai, Anthony D., Carson K.L. Lo, Adam S. Komorowski, Mallika Suresh, Kevin Guo, Akhil Garg, Pranav Tandon, et al. "Staphylococcus Aureus Bacteraemia Mortality: A Systematic Review and Meta-Analysis." Clinical Microbiology and Infection 28, no. 8 (August 2022): 1076–84. https://doi.org/10.1016/j.cmi.2022.03.015.
2) Jain, Nidhi, Chaithanya Avanthika, Abhishek Singh, Sharan Jhaveri, Ivonne De la Hoz, Gashaw Hassen, Genesis P Camacho L, and Keila G Carrera. "Deep Vein Thrombosis in Intravenous Drug Users: An Invisible Global Health Burden." Cureus, October 3, 2021. https://doi.org/10.7759/cureus.18457.
3) Minejima, Emi, Joyce Bensman, Rosemary C. She, Wendy J. Mack, Martin Tuan Tran, Pamela Ny, Mimi Lou, et al. "A Dysregulated Balance of Proinflammatory and Anti-Inflammatory Host Cytokine Response Early During Therapy Predicts Persistence and Mortality in Staphylococcus Aureus Bacteremia*." Critical Care Medicine 44, no. 4 (April 2016): 671–79. https://doi.org/10.1097/CCM.0000000000001465.
4) Fanucchi, Laura C., Sharon L. Walsh, Alice C. Thornton, and Michelle R. Lofwall. "Integrated Outpatient Treatment of Opioid Use Disorder and Injection-Related Infections: A Description of a New Care Model." Preventive Medicine 128 (November 2019): 105760. https://doi.org/10.1016/j.ypmed.2019.105760.