Streptococcus anginosus group causing superior mesenteric and portal vein suppurative thrombophlebitis

Carissa Burke DO, Carlos Ramirez Rincon MD, Jimmy Chua MD
Trios Health Hospital, Kennewick, Washington

Trios Health
A UW Medicine Community Health Partner™

INTRODUCTION

The Streptococcus anginosus group has been recognized as normal human flora to the gastrointestinal and genitourinary tract with the ability to cause abscesses and systemic infections. We present the first reported case of superior mesenteric accompanied with portal vein suppurative thrombophlebitis caused by the S. anginosus group.

CASE PRESENTATION

A 27-year-old previously healthy male presented with gradually worsening right upper quadrant pain of one week duration associated with fever, nausea and diarrhea.

- Review of systems and physical exam found the patient febrile, tachycardic, and jaundiced with diffuse abdominal tenderness.
- Laboratory studies were notable for:
  - WBC 22.65 K/uL,
  - Total bilirubin 7.0 mg/dL and direct bilirubin 6.0 mg/dL
  - Alkaline phosphatase 199 U/L, AST 77 U/L, ALT 85 U/L
  - Platelets 71 K/uL
  - LDH 251 U/L
  - CRP 37.2 mg/dL
- Urinalysis, HIV and hepatitis serologies were unremarkable.
- CT abdomen/pelvis with contrast revealed superior mesenteric vein thrombosis.
- Started on heparin gtt and piperacillin/tazobactam for sepsis.

HOSPITAL COURSE

- MRCP unremarkable.
- On day 3: patient's abdominal pain worsened with persistent fever of 39.5°C. Repeat CT abdomen/pelvis with contrast revealed worsening thrombosed superior mesenteric vein with propagation of the thrombus into the portal vein.
  - Vancomycin initiated
- On day 5: blood cultures grew S. anginosus group.
  - Antibiotics transitioned to ceftriazone, vancomycin and metronidazole.
- CT head, TTE, EGD and colonoscopy were unremarkable.
- Hypercoagulability work-up including factor V leiden, antithrombin activity and antigen, anticardiolipin, lupus anticoagulant, beta-2 glycoprotein, protein C and S, were all negative.
- On day 7: S. anginosus group blood cultures returned pansensitive.
  - Antibiotics deescalated to IV ampicillin/sulbactam.
- On day 11: patient clinically improved and stable for discharge.
  - Antibiotics transitioned to outpatient IV ertapenem and oral warfarin therapy for a total of five weeks duration.
- Patient doing well at one week outpatient follow-up.

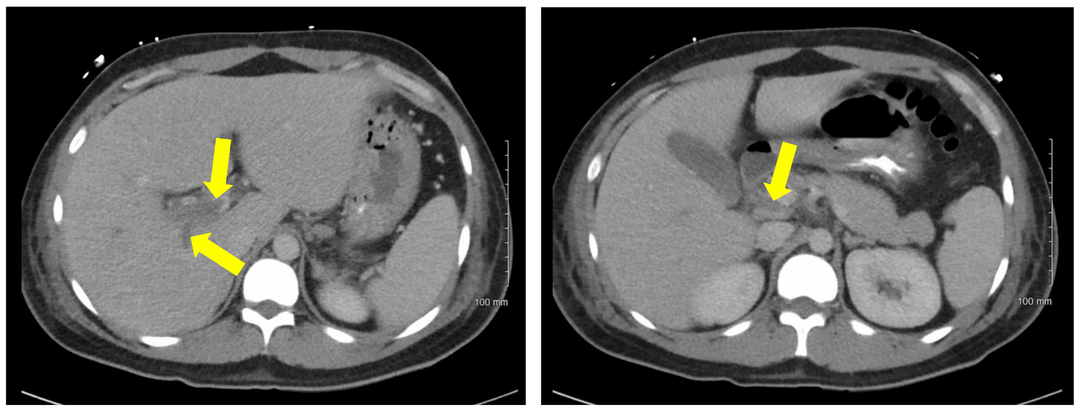

Figure 1 & 2: CT Images reveal propagation of superior mesenteric vein thrombosis to the portal vein.

DISCUSSION

- Differential diagnosis for superior mesenteric and/or portal vein thrombosis includes:
  - Malignancy – hepatocellular, pancreatic or cholangiocarcinoma
  - Inflammation/Infection - enteritis, Crohn's disease
  - Hypercoagulable state
  - Portal hypertension
- S. anginosus group has been documented causing intracranial and intrabdominal abcsesses, endocarditis, and thrombosis.
- In our case, the patient's bacteremia and thrombosis were worked up extensively with no clear etiology found.
- By diagnosis of exclusion, it was concluded that the patient had a rare case of Streptococcus anginosus group superior mesenteric and portal vein suppurative thrombophlebitis.

REFERENCES

Aljundi, R., & Ang, J. (2020). A rare case of Bacteroides fragilis and Streptococcus anginosus sepsis associated with superior mesenteric vein thrombophlebitis in a teenager. *Pediatrics*, *146*(1), 458–459. https://doi.org/10.1542/peds.146.1_MeetingAbstract.458

Clarridge III, J. E., Attorri, S., Musher, D. M., Hebert, J., & Dunbar, S. (2002). Streptococcus intermedius, Streptococcus constellatus, and Streptococcus anginosus ("Streptococcus milleri Group") Are of Different Clinical Importance and Are Not Equally Associated with Abscess. In *Clinical Infectious Diseases* (Vol. 77030, Issue 113). Holcombe Blvd. https://academic.oup.com/cid/article/32/10/1511/467974

Bert, F., & Bariou-Lancelin, M. (n.d.). *Clinical Significance of Bacteremia Involving the "'Streptococcus milleri'" Group: 51 Cases and Review*. https://academic.oup.com/cid/article/27/2/385/324697