37-year-old male presenting with left sided neck swelling 1 week post pharyngitis

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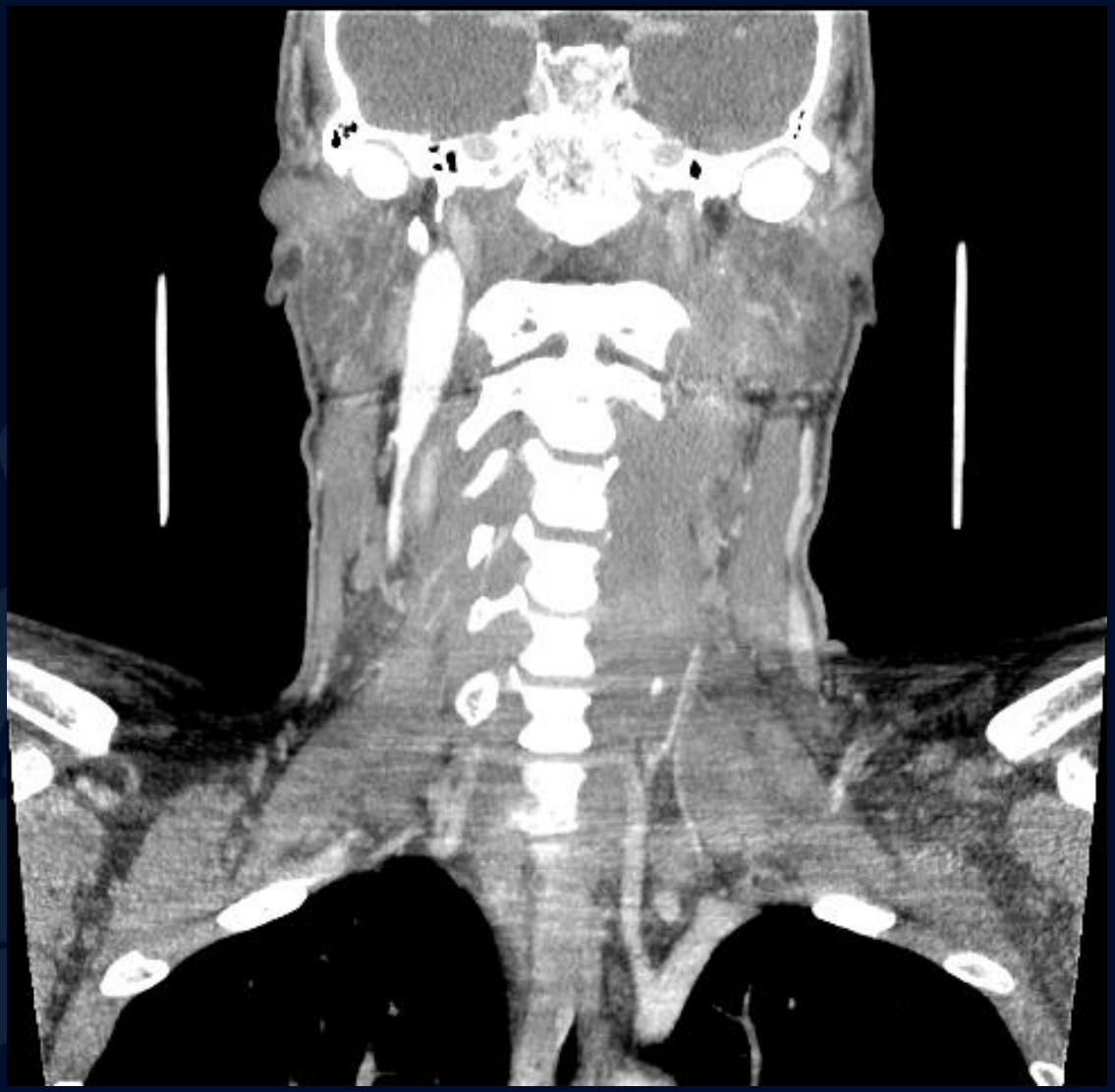

CT venogram of the neck

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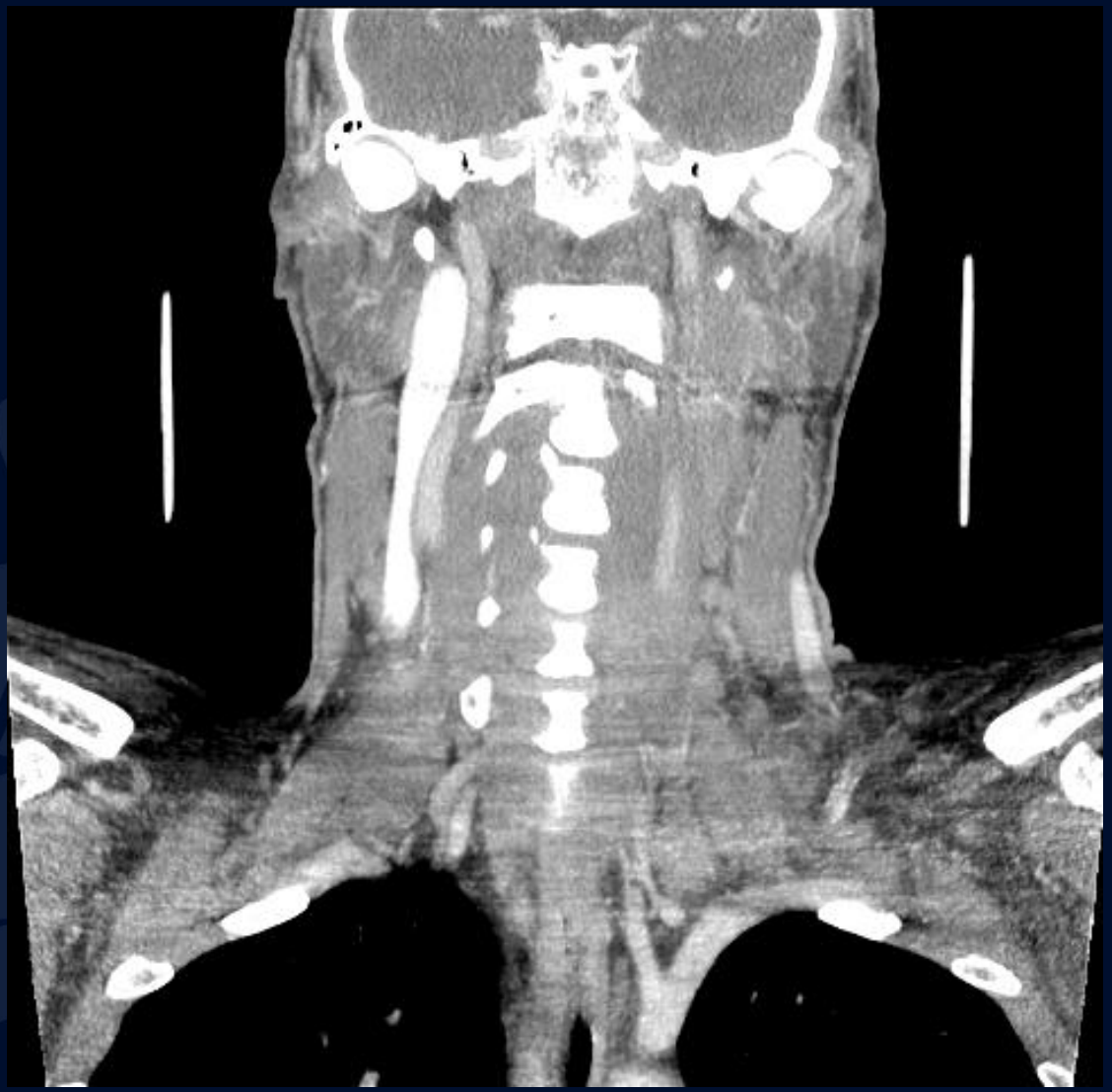

CT venogram of the neck

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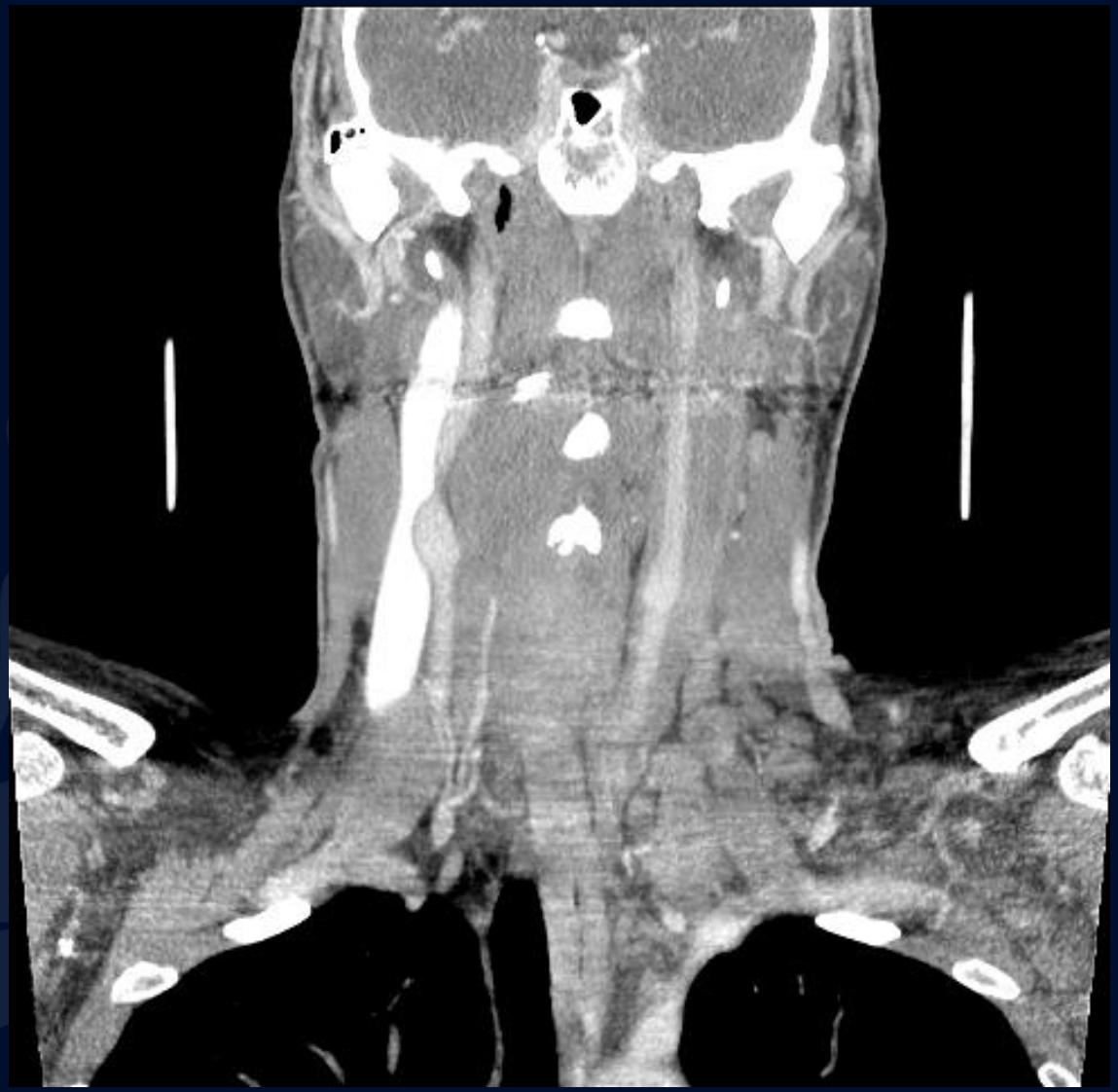

CT venogram of the neck

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Lemierre Syndrome

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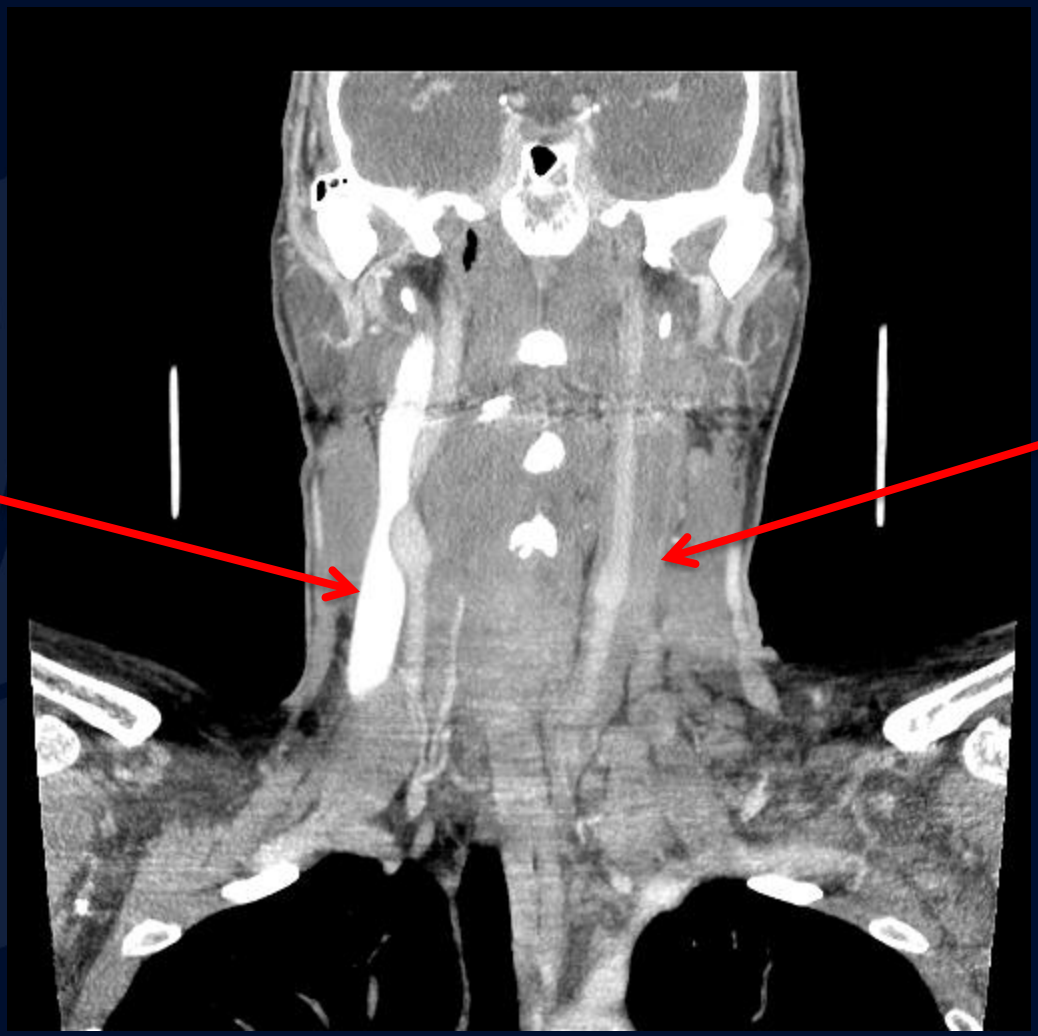
Patent jugular vein



Occluded jugular vein

CT venogram of the neck

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CT venogram of the neck

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Imaging Findings

- Evidence of thrombophlebitis with complete thrombosis of the left internal jugular vein with surrounding inflammatory changes. There is inflammatory changes of the left palatine tonsil as well. Coupled with patient's history of possible recent upper respiratory infection, the CTV findings are suggestive of Lemierre syndrome. Reactive lymphadenopathy on the left side as described.

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Lemierre Syndrome

- Septic thrombophlebitis of the internal jugular vein secondary to oropharyngeal infection. The condition typically begins with oropharyngeal infection and frequently involves inflammation within the wall of the vein, infected thrombus within the lumen, surrounding soft tissue inflammation, persistent bacteremia, and septic emboli.
- Most often due to infection with *Fusobacterium necrophorum*.
- No systematic study of the pathophysiology, management, and outcome of Lemierre syndrome has been performed as this remains a sporadic and relatively rare condition.

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Lemierre Syndrome

- **Diagnosis**: Radiographic imaging demonstrating IJV thrombus, together with culture data demonstrating *F. necrophorum* or other implicated pathogen. Ultrasonography of the neck is an alternative modality for detection of IJV thrombus.

- **Symptoms**: Frequently preceded 1-3 weeks by pharyngitis in association with tonsil or peritonsillar involvement followed by fever, rigors, exudative tonsillitis, sore throat, dysphagia, trismus, unilateral neck pain, and tenderness. Signs of IJV thrombosis include tenderness, swelling, and/or induration over the neck, over the angle of the jaw, or along the sternocleidomastoid muscle [1].

- **Epidemiology**: Occurs most commonly in otherwise healthy young adults. Studies show annual incidence among individuals age 14 to 24 was 14.4 cases per million people; the incidence in the population was 3.6 cases per million people [2-4].

- **Treatment**: Antibiotic regimen that is resistant to beta-lactamase, since *F. necrophorum* beta-lactamase production and treatment failure with penicillin has been reported [5]. Empiric antibiotic regimens:
  - Piperacillin-tazobactam, Carbapenems or Ceftriaxone plus Metronidazole
  - If cultures grow *F. necrophorum*, the antibiotic regimen can be narrowed to metronidazole monotherapy

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References

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2. Hagelskjaer Kristensen L, Prag J. Lemierre's syndrome and other disseminated Fusobacterium necrophorum infections in Denmark: a prospective epidemiological and clinical survey. Eur J Clin Microbiol Infect Dis 2008; 27:779.
3. Armstrong AW, Spooner K, Sanders JW. Lemierre's Syndrome. Curr Infect Dis Rep 2000; 2:168.
4. Baker CC, Petersen SR, Sheldon GF. Septic phlebitis: a neglected disease. Am J Surg 1979; 138:97.
5. Golpe R, Marín B, Alonso M. Lemierre's syndrome (necrobacillosis). Postgrad Med J 1999; 75:141.

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