



CASE STUDY

LEMIERRE'S SYNDROME: POST ANGINAL SEPTICEMIA-A CASE REPORT

*Dr. B. BhaskaraRao, Dr. Nikitha Kunam, Dr. N. V. N. Gopal and Dr. Aparna Gorijala

Nri General Hospital, Chinakakani, India

ARTICLE INFO

Article History:

Received 11th November, 2017

Received in revised form

23rd December, 2017

Accepted 16th January, 2018

Published online 18th February, 2018

Key words:

Septicemia,
Internal Jugular Vein,
Thrombosis,
Lemierre's Disease.

ABSTRACT

Lemierre's syndrome is a condition characterized by thrombophlebitis of the internal jugular vein and bacteremia caused by primarily anaerobic organism, *Fusobacterium necrophorum* following a recent oro pharyngeal infection. This has been an uncommon illness in the era of antibiotic therapy, though it has been reported with increasing frequency in the past 15 years. Lemierre's syndrome should be suspected in young healthy patients with prolonged symptoms of pharyngitis followed by symptoms of septicemia or pneumonia, or an atypical lateral neck pain. Diagnosis is often confirmed by identification of thrombophlebitis of the internal jugular vein and growth of anaerobic bacteria on blood culture. Treatment involves prolonged antibiotic therapy occasionally combined with anticoagulation. We report a 20 year old female patient who presented to our hospital with Lemierre's syndrome

Copyright © 2018, Dr. Bhaskara Rao et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Dr. Bhaskara Rao, B., Dr. Nikitha Kunam, Dr. Gopal, N.V.N. and Dr. Aparna, G. 2018. "Lemierre's syndrome:post anginal septicemia-a case report", *International Journal of Current Research*, 10, (02), 65069-65071.

INTRODUCTION

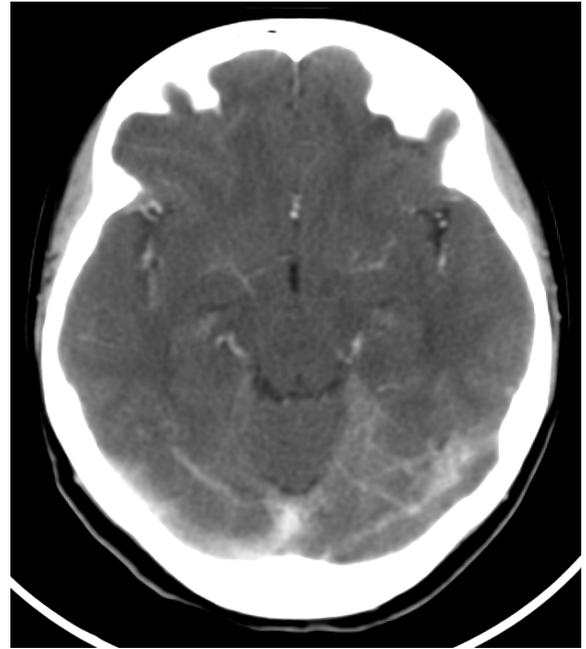
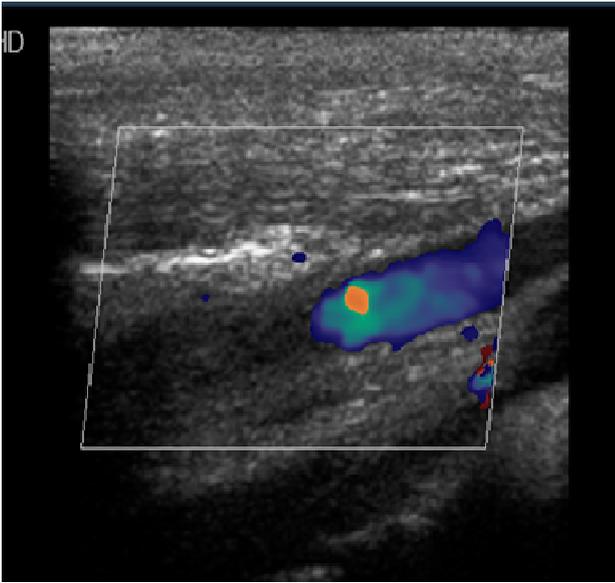
Lemierre's syndrome is a condition characterized by thrombophlebitis of the internal jugular vein and bacteremia caused by primarily anaerobic organism, *Fusobacterium necrophorum* following a recent oropharyngeal infection. This has been an uncommon illness in the era of antibiotic therapy, though it has been reported with increasing frequency in the past 15 years. The incidence of Lemierre syndrome has been estimated at between 0.6 and 2.3 per million, with mortality rates from 4 to 18% (Syed *et al.*, 2007). It was first described in 1900 by Courmont and Cade, and then in 1918 by Schottmuller, named in 1936 by the French microbiologist Dr. Andre Lemierre, who found that the clinical findings were so characteristic that it was possible to make a diagnosis without the results of any type of bacterial testing, including blood cultures (Courmont, 1900; Lemierre, 1936). We report a 20 year old female patient who presented to our hospital with Lemierre's syndrome.

Case Report

A 20 year old female patient presented to the hospital with a history of fever for 15 days, sore throat, rhinorrhea for 4 days

and pain and swelling on the left side of the neck for 1 day. She is married and there is no history of usage of oral contraceptive pills. On local examination, a tender cord like non pulsatile swelling of size 3 x 4 cm present 1 inch below and lateral to angle of mandible on left side anterior to sternocleidomastoid muscle is present and posterior pharyngeal wall is congested. Her investigations revealed Hb-4.9gm%; PCV-19%;RBC-3.3 million/cumm; MCV-58 fl, MCH-14pg, MCHC-25%;TC-6700cells/cumm, Platelets-3.8lakh/cumm, ESR-100mm/hr; Peripheral blood smear showed microcytic and hypochromic red cells; BT-2 min 30 sec, CT-4 min 30 sec; normal liver and renal function tests; Viral markers were negative; Anemia capsule showed Serum iron-27 ug/ml, TIBC-203 ug/ml, serum ferritin-13.52 ng/mL; Ultrasonography of neck showed complete thrombosis of left distal internal jugular vein.

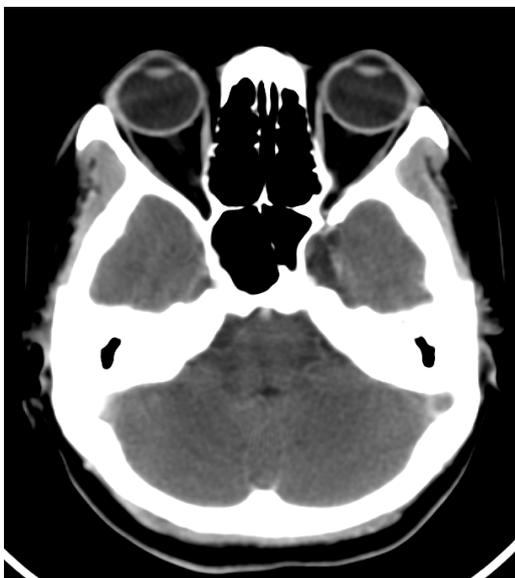
CTvenogram revealed left IJV thrombosis, transverse and superior sagittal sinus thrombosis. She was treated with IV Fluids; 2 units packed cell transfusion; Cap. Clindamycin 600 mg TID for 3 weeks; Inj. Enoxaparin sodium 0.4 ml s/c twice daily for 5 days; Tab. Acitrom 2 mg once daily for 3 months; Patient is reviewed 3 weeks later upon which the cord like thickening of IJV disappeared and USG neck showed chronic thrombosis of superior part of IJV on the left side.



Ct Venogram showing left superior sagittal and transverse sinus Thrombosis



Thrombosis of Left distal internal jugular vein



DISCUSSION

Lemierre's syndrome is a condition characterized by thrombophlebitis of the internal jugular vein and bacteremia caused by primarily anaerobic organism, *Fusobacterium necrophorum* following a recent oropharyngeal infection. The incidence of Lemierre syndrome has been reported between 0.6 and 2.3 per million, with mortality rates between 4% and 18% (Syed, 2007). Although the syndrome may affect patients of all ages, more than 70% of cases have been documented in young adults between the ages of 16 and 25 years and show a greater likelihood in males compared to females (Syed, 2007; Chirinos, 2002). The palatine tonsils and peritonsillar tissue are the primary sources of infection in most cases. Following the primary infection, there is local invasion of the lateral pharyngeal space and septic thrombophlebitis of the IJ vein. Multiple virulence factors including cell wall lipopolysaccharide endotoxin, leucocidin, hemolysin, lipase, hemagglutinin, and a cytoplasmic toxin are produced by *F. necrophorum* (Langworth, 1977). Hemolysin lytically destroys erythrocytes, whereas hemagglutinin promotes platelet aggregation (Hagelskjaer, 2000; Tan, 1996), and it is believed that phospholipase A and lysophospholipase are also key contributors to the hemolytic effects of *F. necrophorum* (Abem, 1979). Leucocidin inhibits leukocyte migration toward the site of infection and protects other facultative organisms from phagocytosis (Amoako, 1993; Jousimies-Somer, 1995). Thrombosis may propagate from the IJ vein inferiorly into the subclavian vein or superiorly into the cavernous, sigmoid or transverse sinuses. Meningitis may also complicate up to 3% of cases. Prolonged antibiotic therapy constitutes the mainstay of treatment of Lemierre's syndrome. The use of anticoagulation is controversial, and it is recommended only if thrombosis extends into the cerebral sinuses or if there has been no improvement in symptoms with antibiotic therapy alone. Surgical treatment of Lemierre's syndrome may involve drainage of abscesses in the neck, most commonly peritonsillar or lateral pharyngeal abscesses. In the pre-antibiotic era, IJ vein ligation or excision was frequently performed to prevent septic embolization.

In the modern era, this drastic measure is taken only when there is evidence of continued septic embolization despite appropriate medical therapy.

Conclusion

Lemierre's syndrome is a rare illness in the modern era of antibiotic therapy, though it has been reported with increasing frequency in the twenty-first century. Lemierre's syndrome should be suspected in young, healthy patients with prolonged symptoms of pharyngitis followed by symptoms of septicemia or pneumonia, or an atypical lateral neck pain. Diagnosis is often confirmed by the identification of IJV thrombophlebitis by an imaging study and growth of anaerobic bacteria on blood culture. Prolonged antibiotic therapy is the cornerstone of treatment, occasionally combined with anticoagulation.

REFERENCES

- Abe PM, Kendall CJ, Stauffer LR, *et al.* 1979. Hemolytic activity of *Fusobacterium necrophorum* culture supernatants due to presence of phospholipase A and lysophospholipase. *Am J Vet Res.*, 40:92-6.
- Amoako KK, Goto Y, Shinjo T. 1993. Comparison of extracellular enzymes of *Fusobacterium necrophorum* subsp. *necrophorum* and *Fusobacterium necrophorum* subsp. *funduliforme*. *J Clin. Microbiol.*, 31: 2244-7.
- Chirinos JA, Lichtstein DM, Garcia J, *et al.* 2002. The evolution of Lemierre syndrome. *Medicine*, 81:458-65.
- Courmont P, Cade A. 1900. Sur une septic-pyohemie de l'homme stimulant a pesteet cause par unstreptobacilleanerobie. *Arch Med ExpAnatPathol.*; 4.
- Hagelskjaer KL, Prag J. 2000. Human necrobacillosis, with emphasis on Lemierre's syndrome. *Clin Infect Dis.*, 31:524-32.
- Jousimies-Somer HR, Summanen PH, Finegold SM. 1995. *Bacteroides*, *Porphyromonas*, *Prevotella*, *Fusobacterium*, and other anaerobic gram-negative bacteria. In: Murray PR, Baron EJ, Pfaller MA, Tenover FC, Tenover FC, editors. *Manual of clinical microbiology*, vol 1. 6th ed. Washington (DC): *American Society for Microbiology Press*, p. 603-20.
- Langworth BF. 1977. *Fusobacterium necrophorum*: its characteristics and role as an animal pathogen. *Bacteriol Rev.*, 41:373-90.
- Lemierre A. 1936. On certain septicaemias due to anaerobic organisms. *Lancet.*; 1(5874):701-3. [http://dx.doi.org/10.1016/S0140-6736\(00\)57035-4](http://dx.doi.org/10.1016/S0140-6736(00)57035-4).
- Syed MI, Baring D, Addidle M, Murray C, Adams C. 2007. Lemierre syndrome: two cases and a review. *Laryngoscope*, 117(9):1605-10. [http:// dx.doi.org/10.1097/MLG.0b013e318093ee0e](http://dx.doi.org/10.1097/MLG.0b013e318093ee0e). PMID:17762792.
- Tan ZL, Nagaraja TG, Chengappa MM. 1996. *Fusobacterium necrophorum* infections: virulence factors, pathogenic mechanism, and control measures. *Vet Res Commun.*, 20:113-40.
