CASE REPORT

Lemierre Syndrome

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SUMMARY

Lemierre syndrome is an uncommon disease which commonly arise from acute bacterial oropharyngeal infection. This disease was first described in 1900 by Courmont and Cade Lemierre. It is commonly caused by Fusobacterium necrophorum1. Lemierre syndrome has been reported to be serious and potentially fatal in the preantibiotic era1. It is characterized by an oropharyngeal infection leading to secondary septic thrombophlebitis of the internal jugular vein with embolization to the lungs and other organs. The incidence has become relatively rare at present and is usually only diagnosed when unsuspected culture results are available1. We report a case of Lemierre syndrome which was recently diagnosed in our centre.

KEY WORDS:
Lemierre's syndrome, septic thrombophlebitis

CASE HISTORY

57 year old Malay man who was referred from a district hospital presented with history of progressively increasing right neck swelling for the 1 week duration. The swelling was initially painless and then became painful for the past 4 days. This symptom was associated with intermittent low grade fever for 2 weeks duration, reduced oral intake, generalised malaise, loss of appetite and night sweats. There was no dysphagia/odynophagia, hoarseness of voice or symptoms of airway compromise. He denied history of chronic cough, hemoptysis or history of contact with any pulmonary tuberculosis patients. He also denied any history insect bite at the neck region.

On examination, he was alert and conscious with no signs of respiratory distress. He appeared overweight and there was an obvious right sided neck swelling measuring 5X6 cm. He was febrile with the temperature of 38.5 degrees celcius. The neck swelling was tender and slightly inflammed. There was no cervical lymphadenopathy and no evidence of facial nerve palsy or trismus. There was slight medialisation of the right lateral pharyngeal wall. The airway was patent.

His blood investigations revealed that his white blood cell was increasing in trend from 6.6 to 20.7. His glucose control was poor with HbA1c of 12.7. His erythrocyte sedimentation rate (ESR) was 126 whilst his Mantoux reading was 0. His arterial blood gas showed mild respiratory alkalosis with mild hypoxia.

An ultrasound neck was done at it showed evidence of abscess at right parotid region measuring 3.6cm X 4.7cm with thrombosed right internal jugular vein (IJV). Right common carotid artery was patent. A CT neck was planned and it showed findings which was consistent with right neck abscess with lymph node in both submandibular region and right level II lymph node. There was also evidence of consolidation in the right upper lobe with right pleural effusion.

He was initially started with IV C-Penicillin 8megaunit QID and IV cloxacillin 1g QID for a week from the district hospital. He was also started with subcutaneous insulin to improve his glycemic control. Two days prior to his transfer to our centre, the antibiotics was changed to IV ceftriaxone 1g BD and IV flagyl 500mg tds as he was not clinically improving. We aspirated about 5cc of frank pus and sent the specimen for culture. Incision and drainage (I&D) was done under general anaesthesia and >10cc thick cheesy pus was drained and the surrounding area debrided. Klebsiella pneumoniea was detected from the pus culture. IV amikacin 600mg BD was started and IV ceftriaxone was stopped. Patient was also started on anticoagulation with subcutaneous fondaparinox and warfarin for the IJV thrombosis.

His condition improved with IV amikacin and his neck wound was managed with povidone dressing. The wound was subsequently approximated with secondary suturing. He was discharged well with oral antibiotics, oral warfarin and oral hypoglycemic agent.

DISCUSSION

The patient above presented with history of neck swelling for 1 week duration. He denied any history of symptoms suggestive of oropharyngeal infection which commonly presents at the initial stage of Lemierre syndrome. Some literature has also cited the primary source of infection possibly be from the ear, mastoid and teeth[2]. However, in this patient, the otoscope findings were normal, there was no evidence of mastioditis and his dental review was normal. It is likely that the underlying uncontrolled diabetes predisposed him to develop neck abscess. He was also noted to have right IJV thrombosis and right basal pneumonia. The pathophysiology of Lemierre syndrome involves septic thrombophlebitis of the peritonsillar veins at the lateral pharyngeal space which became the source of septic emboli that potentially migrate to other organs including the lungs and large joints; and in this patient - the right lung[2]. Lemierre syndrome has known to cause many other complications including meningitis, endocarditis, soft tissue infections, and empyema.

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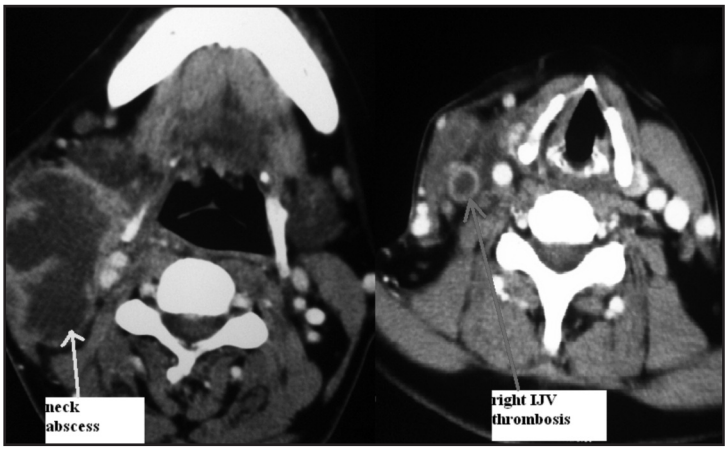

Fig. 1: CT scan of this patient demonstrating huge neck abscess with right IJV thrombosis.

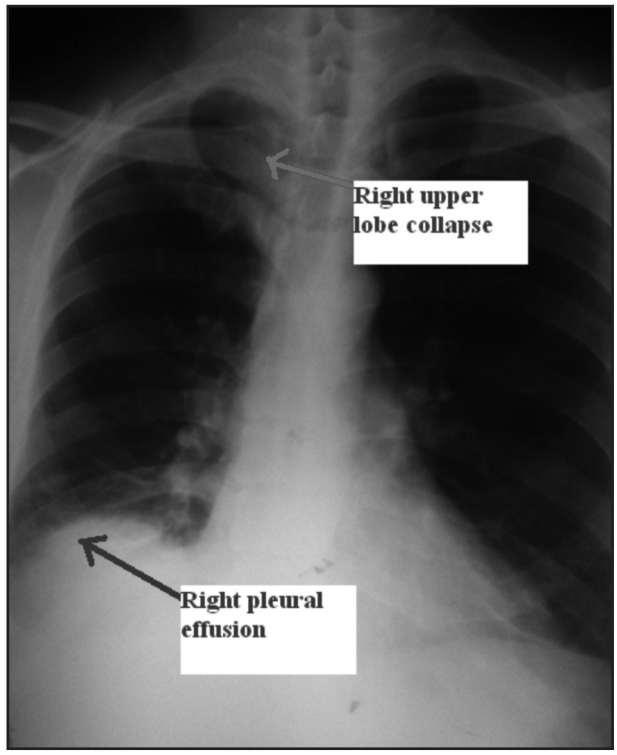

Fig. 2: Chest radiograph of patient showing right upper lobe collapse with right pleural effusion

The most common organism involved is Fusobacterium necrophorum; an anaerobic, gram negative bacillus and is present as part of the normal flora of the oral cavity, female genital tract and gastrointestinal tract[1]. This bacteria can produce various toxins and exhibit the ability to cause intravascular invasion and thrombosis. In this patient, the organism involved is Klebsiella pneumonia. Klebsiella are non-motile, rod shaped gram negative bacteria which colonises the skin, pharynx, or gastrointestinal tract[3]. Klebsiella pneumonia infection commonly occurs in the lungs where they can cause necrosis, hemorrhage and inflammation of lung tissue affecting mainly immunosuppressed individuals[3]. This organism is also incriminated in nosocomial infections; commonly causing infections of urinary tract, lower respiratory tract and biliary tract[3]. There is no literature regarding the similarities between Fusobacterium and Klebsiella, except for the fact that they are both gram negative organism. It could be possible that these two organisms are both virulent organisms and have the capacity to spread to other organs. The patient has uncontrolled diabetes which makes him immune-compromised and with the history of prolonged hospital stay prior to transfer to our centre, it is also possible that he has developed nosocomial infection.

In the past, the only known treatment of Lemierre syndrome was ligation of the affected internal jugular vein to prevent sepsis[1]. However, this method is not popular now as many patients respond well to 4-6 weeks course of antibiotic cover1. With the presence of IJV thrombosis, anticoagulation should be considered especially for prevention of migration of the thrombus causing cavernous sinus thrombosis1. This patient was started on oral warfarin with target range international normalised ratio (INR) of 2-3.

Although the incidence of Lemierre syndrome is rare; and possibly underdiagnosed, it is important that early diagnosis and prompt treatment is commenced in order to avoid serious morbidity associated with this disease.

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