Acute neck pain referred to the surgeon: Lemierre's syndrome as a differential diagnosis

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ABSTRACT

Lemierre's syndrome is usually reported in the young and in fit individuals. We report a case of an 81-year-old woman who presented with thrombophlebitis of the internal jugular vein with a pulmonary embolism.

KEYWORDS

Lemierre Syndrome – Thrombophlebitis – Jugular Veins

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Thrombophlebitis of the neck veins can present acutely with a painful neck. This condition can develop secondary to trauma, carcinoma, infection and central venous catheters. Lemierre's syndrome is an infective thrombophlebitis of the neck veins secondary to an anaerobic infection in the oropharyngeal region with disseminated septic emboli.¹ We present the case of an elderly woman with acute neck pain whose imaging revealed thrombophlebitis of the internal jugular vein and a pulmonary embolism.

Figure 1 Contrast enhanced computed tomography neck revealing extensive thrombus obstructing the left internal jugular vein (arrow) with lost adjacent left parapharyngeal fat planes with mass effect

Case history

An 81-year-old woman presented to the emergency department with the complaint of left-sided neck pain for one day. This was preceded by left-sided headache and odynophagia for three days. Her past medical history was unremarkable except for controlled hypertension and polymyalgia rheumatica. On admission, her vital signs were stable and she was afebrile. She did not appear toxic or flushed. Tenderness with fullness was noted over the left supraclavicular region. No abnormality was noted in the oral cavity or the external auditory canal. Laboratory tests revealed a leucocyte count of $11,600/\text{mm}^3$ with the neutrophil count being $8,200/\text{mm}^3$ and C-reactive protein levels of 48mg/l . Urea and electrolyte concentrations were normal. Blood culture was negative.

Ultrasonography suggested a thrombosis of the left internal jugular vein and prompted immediate computed tomography (CT) of the neck and chest. Contrast enhanced CT revealed extensive thrombosis of the left internal jugular vein with evidence of phlebitis (Fig 1). Multiple bilateral pulmonary emboli were also noted (Fig 2).

Treatment with antibiotics was commenced, initially with piperacillin and tazobactam. However, the patient developed anaphylaxis and, on advice from the microbiologist, these were changed to tigecycline. For anticoagulation she was commenced on low molecular weight heparin and warfarinised. Antibiotics were continued for two weeks. CT of the abdomen and pelvis was also performed to rule out any malignancy that could account for the thromboembolic phenomenon observed in the patient and this was reported as normal.

At her follow-up visit after four weeks the pain and swelling had settled but the patient remains under close follow-up.

Figure 2 Contrast enhanced computed tomography of the chest showing filling defect seen in the left apical lobar pulmonary artery branch

Discussion

In 1936 Lemierre described a syndrome with the characteristic elements of oropharyngeal infection, sepsis, internal jugular vein thrombosis and distant septic emboli, the main causative organism being *Fusobacterium necrophorum*.¹ With the frequent use of penicillin in the 1960s and 1970s, the disease was not reported and was denoted a 'forgotten disease'.² In recent times the disease appears to have re-emerged either due to antibiotic resistance or to changes in antibiotic prescription patterns.⁵

Lemierre's syndrome usually affects healthy teenagers and young adults but can also affect other age groups.² The disease commences as an oropharyngeal infection that then proceeds to a thrombophlebitis of the internal jugular vein either by direct spread through fascial planes or by haematogenous or lymphatic invasion.⁴ Subsequently, septic emboli from the primary site can spread to distant organs, with pleuropulmonary involvement being most common and septic arthritis being less common.⁵ Uncommon complications including necrotising fasciitis of the neck, paradoxical emboli, deranged liver function tests and renal failure have also been reported.⁵⁻⁸ In the post-antibiotic era the mortality can be up to 20%.⁹

Anticoagulation therapy is often suggested but there is no evidence from randomised controlled trials on which to base this recommendation. In our case the presence of a pulmonary embolism prompted anticoagulation and our patient's symptoms improved with time.

Conclusions

Although this syndrome most commonly affects young and fit individuals, it should not be excluded as a differential diagnosis in the elderly. Our case demonstrates that Lemierre's syndrome should be considered for all patients with acute neck pain and swelling with elevated inflammatory markers even though they might not appear to be toxic at the outset. The blood cultures were negative but cultures are not imperative for diagnosis.⁵ If the diagnosis is missed, it can have potentially catastrophic consequences. We report this case to increase awareness of this uncommon disease among surgeons when examining patients with acute onset neck pain and raised inflammatory markers so that it is diagnosed early, thereby preventing delay in the commencement of appropriate treatment.

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