Case Report

Atypical Lemierre syndrome, thrombophlebitis of the facial vein

Abstract

A young man complained of fever and left-sided neck pain. Computed tomography (CT) scan of the neck showed a round low-density area with enhancement at the margin. We suspected a deep neck abscess, and the antibiotic treatment was started. After 3 days, CT scan showed that the oval low-density area extended to its junction with the left internal jugular vein. We diagnosed him as having Lemierre syndrome of the facial vein thrombosis. CT scan of the chest showed multiple pulmonary embolisms. The patient started to receive intravenous anticoagulant therapy. The swelling and tenderness of the neck gradually resolved, and the patient improved without complications. Lemierre syndrome is potentially fatal. Prompt diagnosis and appropriate therapy are needed. Radiographic findings are characteristic and facilitate the diagnosis of Lemierre syndrome. A positive scan typically shows a filling deficit representing occlusive thrombus in the internal jugular vein. In this case, it was difficult to diagnose because the patient had thrombus involving only a facial vein. Recently, cases of Lemierre syndrome have increased, so it is necessary to know Lemierre syndrome of the facial vein thrombosis.

In November 2011, a 23-year-old man presented with a 1-week history of sore throat and 3-day history of left-sided neck pain without improvement after outpatient antibiotic therapy from the general hospital. He had no medical history. Initial examination revealed fever (38.4°C), swelling and tenderness in the left side of the neck, and flare and swelling of the bilateral palatine tonsils with pus. Laboratory tests showed a leukocyte count of 15.9 × 10^9/L (neutrophils, 87.7%); D-dimer, 4.38 μg/mL; and C-reactive protein, 8.5 mg/dL. Computed tomography (CT) scan of the neck showed a round low-density area (diameter, 7 mm) anterior of the left internal jugular vein with enhancement at the margin of the area. We suspected a small, deep, neck abscess. The antibiotic treatment was started using cefepime and clindamycin on an inpatient basis. Three days after hospitalization, inflammatory parameters continually dropped, swelling and tenderness in the neck had not improved, and CT scan of the neck showed that the oval low-density area extended to its junction with the left internal jugular vein (Fig. 1). Based on these findings, Lemierre syndrome of the facial vein thrombosis was suspected. On the other hand, CT scan of the chest showed multiple, peripheral pulmonary cavitary lesions suggestive of pulmonary embolism (Fig. 2). The patient continued to receive intravenous antibiotics and started to receive intravenous heparin and oral warfarin. The swelling and tenderness of the neck gradually resolved within 7 days, and the patient improved without complications. He continued to receive oral warfarin for 4 months without complications or recurrence.

Lemierre syndrome, internal jugular vein thrombosis with anaerobic septicemia, causes metastatic lung abscesses, septic arthritis to osteomyelitis, skin and soft tissue abscesses, liver and splenic abscesses, cerebral abscess formation, cranial nerve paralysis, and so on, and is potentially fatal [1,2]. Although the cause of the syndrome is unknown, it is thought that involvement of the internal jugular vein occurs by direct extension through the fascial plane between the tonsil and the parapharyngeal space or by hematogenous or lymphatic spread from peritonsillar vessels, and then septic emboli can arise and spread to distant sites and organs [3]. After the advent of antibiotic therapy, as penicillin was frequently used for patients with pharyngitis, cases of Lemierre syndrome gradually decreased and became known as “the forgotten disease.” However, recently, cases of the Lemierre syndrome have increased, and it is thought that the reason is the decreased use of antibiotics for upper respiratory infections [4]. Prompt diagnosis and appropriate therapy, intravenous antibiotics with good anaerobic coverage with or without anticoagulation, and supportive care are needed. It is difficult to diagnose Lemierre syndrome based only on the clinical symptoms because the clinical course of Lemierre syndrome is variable and complications can involve almost any symptom in the body. Radiographic findings, particularly contrast-enhanced CT, are characteristic and facilitate the diagnosis of Lemierre syndrome [5]. A positive result from a scan typically shows a filling deficit representing occlusive thrombus in the internal jugular vein due to *Fusobacterium necrophorum* infection. In the present case, because the patient had thrombus involving only a facial vein, it was difficult to diagnose because the internal jugular vein was intact. Therefore, although we could not make a correct diagnosis at the first examination, we could subsequently...
diagnose the patient by CT imaging, which showed an extended oval low-density area at the junction with the left internal jugular vein. He was then able to receive appropriate treatment before experiencing significant morbidity. However, it was necessary to suspect Lemierre syndrome despite the intact internal jugular vein. Because the diagnosis of Lemierre syndrome is not always straightforward, a high index of suspicion is needed.

Takashi Iizuka MD
Department of Otolaryngology
Juntendo University Urayasu Hospital
Chiba, Japan

Keiko Nagaya MD
Daisuke Sasaki MD
Takuo Haruyama MD
Masataka Kojima MD
Department of Otolaryngology
Juntendo University Urayasu Hospital
Chiba, Japan

Hiroyuki Isogai MD
Department of Cardiology
Juntendo University Urayasu Hospital
Chiba, Japan

Hiroshi Yoshikawa MD
Department of Otolaryngology
Juntendo University Urayasu Hospital
Chiba, Japan

Fig. 1  Contrast-enhanced CT of the neck. Oval low-density area extended to the junction with the left internal jugular vein (arrow).

Fig. 2  Contrast-enhanced CT of the chest. Multiple peripheral pulmonary cavitary lesions suggestive of pulmonary embolism (arrowhead).
References


