Complex partial seizure as a presentation of Lemierre’s syndrome

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I. Abstract

- Lemierre’s syndrome is difficult to treat with early suspicion because of its various clinical presentations. We demonstrated unusual presentation of Lemierre’s syndrome as a complex partial seizure.
- A 17-year-old female had aggravated symptoms of upper respiratory infection for 2 weeks and then complex partial seizure during one hour. Laboratory test revealed acute inflammatory state and radiologic images including computed tomography and angiography demonstrated right lateral neck inflammation with internal jugular vein occlusion. She underwent incision and drainage of inflammatory tissue and ligation of internal jugular vein. Because of progression of thrombosis of distal internal jugular vein, she had anticoagulation therapy for 3 months. After that, she followed-up without any discomfort.
- Lemierre’s syndrome could be successfully managed by combined surgical and medical treatment. Proper treatment with early suspicion is crucial because it could present various clinical features and cause serious complications.

II. Background

- Lemierre’s syndrome, which is known as postanginal septicemia or human necrobacillosis, is a rare disease of the head and neck that often affects healthy adolescents and young adults. It has been described as internal jugular vein thrombosis with recent odontogenic infection.
- Clinical presentation of Lemierre’s syndrome was mainly sore throat, neck mass and neck pain. In addition, it could cause several fatal complications such as meningitis, brain abscess, pulmonary thromboembolism with mortality rate of 5%. Because of its variety of clinical presentation, early suspicion and treatment of Lemierre’s disease has been considered as difficult. In some cases of Lemierre’s syndrome, they revealed neurologic symptoms accompanied by encephalopathy and stroke.
- In this report, we demonstrated unusual clinical presentation of Lemierre’s syndrome as a complex partial seizure.

III. Case

- A 17-year-old female was previously healthy and lost body weight about 10 kg for the purpose of diet during 2 months. Recently, she had cough, sputum and fever for 2 weeks, and symptoms were not relieved in spite of oral antibiotics therapy (amoxicillin/clavulanate). She had complex partial seizure with upper eye ball deviation and loss of consciousness during 1 hour after agitation.
- She was transferred to emergency room of our hospital, and seizure was stopped at that time. Electroencephalography was normal and brain magnetic resonance imaging (MRI) revealed no significant focal lesion in the brain. However, diffuse inflammatory change adjacent to right internal jugular vein (Fig. 1A) was identified on neck contrast computed tomography (CT) and occluded right internal jugular vein with brain cortical veins enlargement was shown on MR angiography (Fig. 2). On laboratory exam, level of white blood cell (WBC) was 11,730/μL, C-reactive protein (CRP) was 33.69 mg/dL and erythrocyte sedimentation rate (ESR) was 120 mm/hr.
- With the diagnosis of septic thrombophlebitis of right internal jugular vein (Lemierre’s syndrome), she underwent radical debridement of necrotic tissue and ligation of right internal jugular vein with intravenous antibiotics administration (piperacillin/tazobactam). 1 week after the surgery, neck CT demonstrated improved inflammatory change of the right neck, (Fig 1B). Therefore, anticoagulation therapy has been started using intravenous heparin (50 sec ≤ target aPTT < 70sec) which was converted to warfarin (2 sec ≤ target PT < 3sec) in 5 days after the initiation of anticoagulation.

IV. Conclusion

- After the surgery, antibiotics therapy was performed for 3 weeks until normalization of blood lab (WBC: 6820 /μL, CRP: 0.44 mg/dL, ESR: 9 mm/hr) and anticoagulation therapy lasted for 3 months. Three months after surgery, neck CT revealed no inflammation of right neck and no change of internal jugular vein thrombosis (Fig. 1C). She was followed-up until 6 months after the surgery without symptom including fever or seizure.

\[ \text{Figure 1. Neck contrast computed tomography A.Diffuse inflammatory change adjacent to right internal jugular vein. B.Improved inflammatory change of the right neck 1 week after the surgery. C.No inflammation of right neck and no change of internal jugular vein thrombosis.} \]

\[ \text{Figure 2. Occlusion of right internal jugular vein with brain cortical veins enlargement on MR angiography.} \]

- Lemierre’s syndrome could be successfully managed by combined surgical and medical treatment. Proper treatment with early suspicion is crucial because it could present various clinical features and cause serious complications.