

Case Report

Interhemispheric Subdural Empyema in 16 Years Old Boy, A Case Report

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Abstract

Subdural empyema usually occurs in the second decade of life. Paranasal sinus infection or middle ear infections are the most common etiology of this condition. Interhemispheric subdural empyema is very rare condition. The most appropriate treatment is surgery. We describe a 16 years old boy with interhemispheric subdural empyema who had no complaints or history of sinusitis or otitis media. He introduced with fever, nausea, vomiting, seizure and hemiparesis. Our diagnosis with imaging determined and demonstrated interhemispheric subdural empyema. After the antibiotic treatment the patient went under operation and drainage of empyema. After the operation all of complaints of the patient improved. We suggest that if all patients with history and symptoms of paranasal sinusitis and middle ear infection have symptoms of ICP rising, Falx syndrome or seizure, the existence of SDE should be checked.

Keywords: *Interhemispheric, Subdural, Empyema*

Introduction

Subdural empyema (SDE) usually occurs in the second decade of life. This disorder is threefold common in males than females. Fever, headache, altered mental status, hemiparesis, nausea and vomiting, seizures, meningismus, periorbital edema, papilloedema and other several symptoms are the most common signs and symptoms in patients with SDE. (1) the most appropriate treatment is surgery and it is recommended that rapid surgery can improve the prognosis of these patients. (2) But now we purposed to describe an interhemispheric subdural empyema (ISE) in 16 years old boy. It seems that ISE is a very unusual condition. (3,4) Paranasal sinus infection or middle ear infections are the most common etiology of this condition (5) but this condition may rarely due to penetrating wound, meningitis and procedures. (6) ISE may represent with "falx syndrome" which characterized by convulsions that beginning in the lower extremity and spreading generally, but not including the face. (7)

two weeks ago. The patient also has been mentioned to other symptoms such as chills, nausea and vomiting. Ten days after the onset of symptoms the patient was experiencing right lower extremity weakness, and before entering the hospital the patient suffered general tonic-clonic seizures twice and urinary retention. At physical exam we observed right hemiparesis and other physical exams were normal.

A Rapid Brain CT Scan Showed hypodense area in the left frontal lobe that extended to falx that this lesion was diagnostic for empyema and had pressure effect on left ventricle, also fullness of left sphenoid sinus was seen. Brain MRI also displayed increase signal in left parasagittal and subtentorial and left parietal lobe that are suggestive for empyema. After diagnosis of ISE antibiotic therapy began, the patient was candidate for surgery. In operation, under general anesthesia, left parietal craniotomy and evacuation of pus was done. Pus was white and very viscid and pus culture was negative for any microorganism growth. The patient's symptom improved and after 8 days was discharged from hospital.

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A healthy 16-year-old boy was hospitalized because of intermittent and low grade fever since

Discussion

SDE is a primarily intracranial infection which located between the duramater and the arachnoid mater. SDE includes 15-22% of focal intracranial

Figures 1 – CT scan and MRI before operation

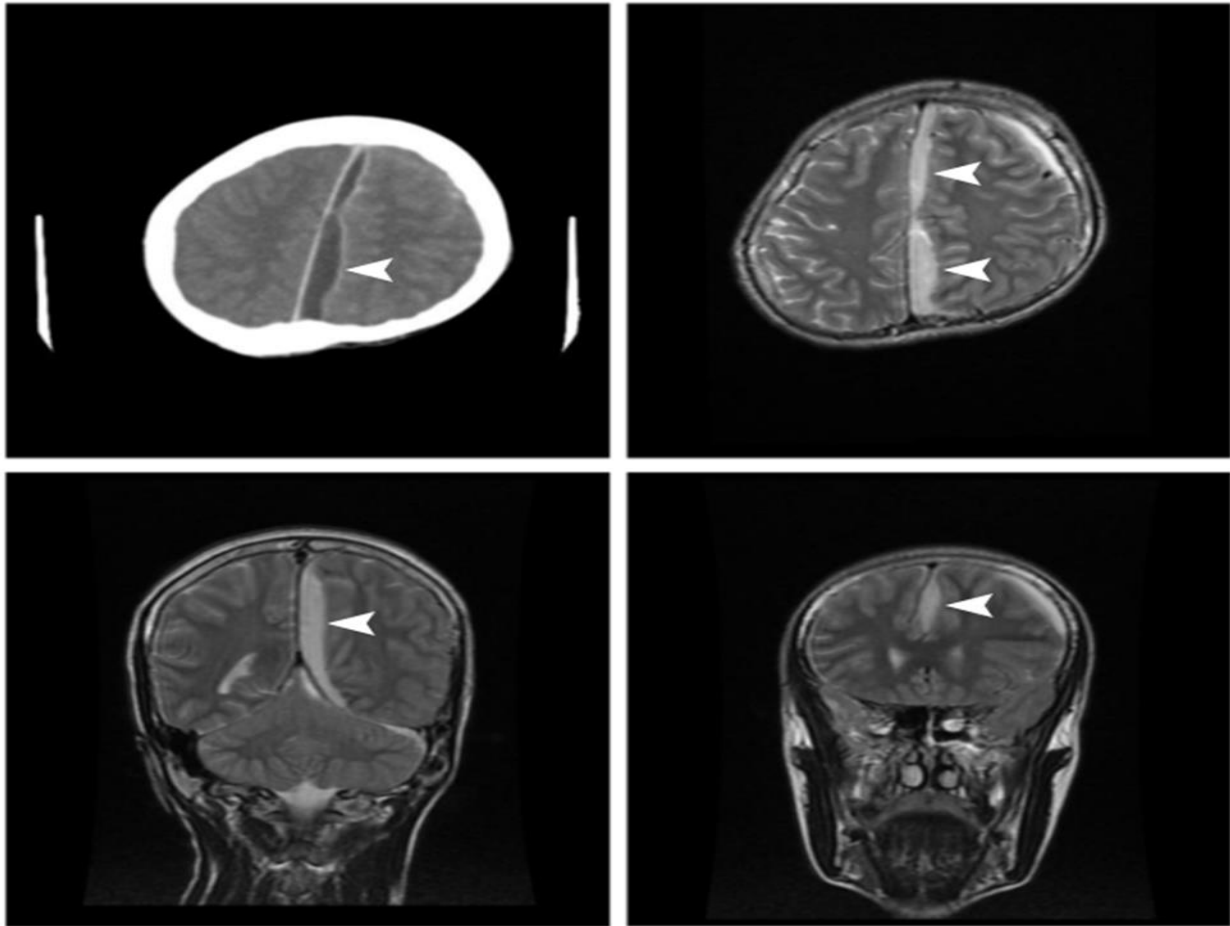
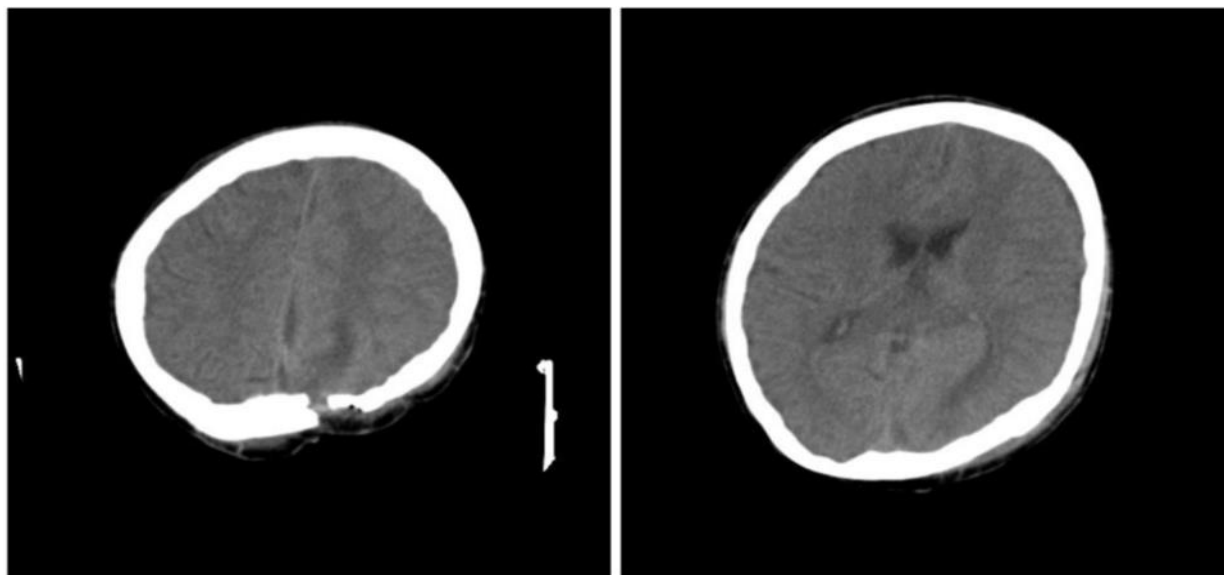


Figure 2 – CT scan after operation



infections that almost because of bacterial infection of paranasal sinuses and middle ear and may spread to subdural space. Paranasal sinuses and oral cavity

and middle ear in these patients should be examine for source of infection. (8-13)

In this case, the patient had no complaints or history of sinusitis or otitis media, but left sphenoid sinus was seen in imaging fullness and congestion. This patient present with seizure, ICP features rising and Falx syndrome which findings are usually presented in this condition. However previously recommended that contrast enhanced CT scan and MRI are the best diagnostic methods for this condition. (14) After the operation all complaints of the patient improved. It should be noted that negative pus culture could be due to antibiotic therapy before pus drainage. This patient was visited one and two months later and he hadn't any complaints.

Conclusion

If all patients with history and symptoms of paranasal sinusitis and middle ear infection have symptoms of ICP rising, Falx syndrome or seizure, the existence of SDE should be checked. As mentioned above, Contrast enhanced CT scan and MRI are two imaging methods for diagnosis of this condition. Surgery and excision of empyema are the most effective methods of treatment for ISE. According to culture and use oral antibiotic for 3-4 weeks is recommended. Serial imaging also suggests to follow up of these patients. (15)

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