Acute Polyradiculoneuropathy with Cerebrospinal Fluid Eosinophilia

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Abstract

A 60-year-old woman who presented with quadriparesis, dysarthria and dysphagia after acute febrile illness was reported. Neurological examination and electrodiagnostic study were compatible with acute polyradiculoneuropathy. Lumbar puncture revealed cerebrospinal fluid eosinophilia. Her muscle power improved after supportive treatment.

Key word : Acute Polyradiculoneuropathy, Cerebrospinal Fluid Eosinophilia

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Acute polyradiculoneuropathy commonly occurs in Guillain-Barre' syndrome (GBS), acute intermittent porphyria and diphtheritic neuropathy. To our knowledge, acute polyradiculoneuropathy with CSF eosinophilia has not been reported. We herein report a case of acute polyradiculoneuropathy with CSF eosinophilia.

CASE REPORT

A 60-year-old woman with no previous medical history was admitted to Srinagarind Hospital in January 1999 because of weakness of limbs, dysphagia and urinary incontinence. About 3 weeks earlier, she had had fever and myalgia for 3 days. After the fever subsided, she experienced progressive weakness of both legs and numbness of her feet. Initially she had difficulty standing up but within a few days she was unable to walk and developed mild weakness of upper limbs and urinary incontinence. She was treated at a local hospital without improvement. Three days prior to admission, she developed mild dysarthria and dysphagia. She

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Table 1. Cerebrospinal fluid analysis

	Pressure (mmH_2O)	WBC (mm^3)	Lymphocyte (%)	Eosinophil (%)	Protein (mg/dl)	Glucose (CSF/blood)
January 21	130	400	73	26	193	32/79 (40%)
January 22	ND	300	79	21	265	12/ND
January 26	ND	2,250	29	71	425	22/67 (33%)
February 3	180	670	47	53	158	21/118 (18%)

ND = not done

had a long history of having eaten raw pila snails and small shrimps and had eaten them 2 months before this illness.

On physical examination, she was a sthenic woman and alert with nasal voice. There was absent gag reflex. Muscle weakness was mainly proximal and symmetrical. The muscle power of proximal: distal was grade 4/5:5/5 of the upper limbs and grade 3/5:4/5 of the lower limbs. There were generalized hyporeflexia of the upper limbs and areflexia of the lower limbs and distal sensory loss to pin prick of the feet. The propioceptive sensation and anal sphincter tone were normal. Other general and neurological examination were normal.

Complete blood count (CBC) revealed hematocrit 38 per cent, white blood cell 12,000 cells per mm^3 with 76 per cent polymorphonuclear cells, 17 per cent lymphocytes, 5 per cent monocytes and 2 per cent eosinophils. Stool examination found *Echinostoma* ova. Blood urea nitrogen, creatinine, fasting blood glucose, electrolytes, VDRL, TPHA, HBsAg, HBsAb, anti-HIV, antinuclear antibody, rheumatoid factor, urine examination and chest X-ray were within normal limits. The results of CSF examination is shown in Table 1. Gram stain, India ink preparation, Ziehl-Neelson stain, cryptococcal antigen and culture of CSF were all negative. Electrodiagnostic study was consistent with polyradiculoneuropathy with normal nerve conduction velocity. Repeated CBC, 5 days later, showed white blood cell 8,700 cells per mm^3 with 13 per cent eosinophils.

During admission for 3 weeks, her motor power was stable and rehabilitation was performed. She developed fever from urinary tract infection which responded to appropriate antibiotics. *Echinostoma* ova was treated with praziquantel. On follow-up 6 months later, muscle power had gradually improved. She could walk with mild assistance.

DISCUSSION

CSF eosinophilia can be found in various diseases but parasitic infection is the commonest cause. In Thailand, *Angiostrongylus cantonensis* and *Gnathostoma spinigerum* are the predominate causes of this condition. Acute severe headache with nonfocal neurological findings except for occasional involvement of cranial nerves are the most common presenting symptoms of angiostrongyliasis (1,2), while the classical and most common manifestations of CNS gnathostomiasis are radiculomyelitis, subarachnoid hemorrhage and intracerebral hemorrhage(3). Acute polyradiculoneuropathy has never been reported in either of them.

In our case, GBS was initially diagnosed from clinical presentation and electrodiagnostic study. Then lumbar puncture was performed to reveal 'albuminocytological dissociation' of CSF. Surprisingly, CSF examination showed CSF eosinophilia which was confirmed by repeat lumbar puncture. The etiologic agent of CSF eosinophilia in this patient was presumed to be *A. cantonensis* because the patient had a history of ingestion of raw snails before this illness and no other causes, including hypereosinophilic syndrome, were detected. The involvement of spinal nerve root in angiostrongyliasis has been described which often presents with localized sensory disturbance(4). We can not explain the exact mechanism of this finding. The possibilities are inflammatory reaction and toxicity of worm excretory products(5).

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ความผิดปกติของเส้นประสาทหลายเส้นเฉียบพลันร่วมกับน้ำไขสันหลังมีอีโอสิโนฟิลสูง

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รายงานผู้ป่วยหญิงอายุ 60 ปี มาโรงพยาบาลด้วยอาการกล้ามเนื้อแขนขาอ่อนแรงทั่วๆไป ร่วมกับอาการพูดไม่ชัดและกลืนลำบากซึ่งเกิดขึ้นหลังจากเป็นไข้ การตรวจร่างกายทางระบบประสาท และการตรวจวินิจฉัยทางไฟฟ้าของเส้นประสาทเข้าได้กับความผิดปกติของเส้นประสาทหลายเส้น การตรวจน้ำไขสันหลังพบมีเซลล์อีโอสิโนฟิลเพิ่มขึ้น ผู้ป่วยมีอาการดีขึ้นหลังการรักษาประคับประคอง

คำสำคัญ : ความผิดปกติของเส้นประสาทหลายเส้นเฉียบพลัน, น้ำไขสันหลังมีอีโอสิโนฟิลสูง

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