Mollaret meningitis: a case report

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SUMMARY: Pişkin İE, Yarımay G. Mollaret meningitis: a case report. Turk J Pediatr 2010: 52; 306-308.

Mollaret meningitis is characterized by three or more episodes of benign recurrent aseptic meningitis in which symptoms and signs resolve spontaneously within two to five days. Severe headache with an acute onset, fever and meningismus are the main clinical features. We report a case of Mollaret meningitis in a seven-year-old girl who presented with four aseptic meningitis episodes in one year.

Key words: Mollaret meningitis, recurrent aseptic meningitis, fever.

Mollaret meningitis was first described by Mollaret in 1944 as a form of aseptic meningitis without identifiable infecting agents[1]. It is characterized by recurrent episodes of severe headache, meningismus and fever. Cerebrospinal fluid (CSF) is pleocytotic with large endothelial cells, neutrophils and lymphocytes. The attacks are separated by symptom-free periods that last weeks to months. The symptoms and signs resolve spontaneously without any neurologic sequelae[2-4]. Although viral infections such as herpes simplex virus (HSV) type 2 have been considered, the etiology is unknown[5-7]. We report a case of Mollaret meningitis in a seven-year-old girl who developed her fourth episode of aseptic meningitis spanning a period of one year.

Case Report

A seven-year-old girl was admitted to the emergency department with fever, headache, nausea, and vomiting. Physical examination revealed no pathological findings except a body temperature of 38.2°C and neck stiffness. Her white blood cell (WBC) count was 17100, and the CSF was colorless, with 3750 cells/mm^3 (80% neutrophils), 28.8 mg/dl protein and 88 mg/dl glucose. The patient was placed on ceftriaxone and vancomycin therapy due to provisional diagnosis of bacterial meningitis. The symptoms and signs had completely resolved within 48 hours. The patient showed no bacterial growth in her CSF culture and was discharged with no symptoms following a 10-day antibiotic treatment. The patient admitted to our emergency department with similar complaints 5, 6, and 12 months after her discharge, and was found to have CSF findings consistent with bacterial meningitis as before (Table I). In the first and second episodes, she was administered antibiotic therapy for meningitis. She was monitored without antibiotic treatment for the third and fourth episodes, and her symptoms and signs resolved without sequelae within 48-72 hours. The patient's CSF culture exhibited no growth; HSV type 1 and HSV type 2 polymerase chain reaction (PCR) and enteroviral studies were found to be negative. The parameters of cellular and humoral immunity along with brain, ear and spinal magnetic resonance (MR) imagings as well as isotopic cisternogram were found to be normal in our patient, who was evaluated for recurrent meningitis. The patient was administered prophylactic colchicine therapy because of suspected Mollaret meningitis. To date, she has shown no similar complaints under this therapy.

Discussion

Mollaret meningitis was first described by Mollaret in 1944 as recurring aseptic meningitis episodes presenting with no identifiable infecting agent. In 1962, Bruyn et al.[2] outlined the criteria for diagnosis of Mollaret meningitis as follows:

1. Recurring episodes presenting with severe headache, meningismus and fever.

Table I. Laboratory/Imaging Data

Date of Lumbar Puncture	12/08/2007	5/28/2008	6/13/2008	12/14/2008
Cerebrospinal fluid (CSF)				
Appearance	Clear	Clear	Clear	Clear
Protein (mg/dl)	28.8	43.1	45.4	30.9
Glucose (mg/dl)	88.5	80.2	62	75
Glucose CSF / Glucose Blood	0.46	0.77	0.45	0.55
Cells (mm^3) (% neutrophils)	3750 (80)	700 (80)	1050 (90)	700 (80)
Bacterial culture	Negative	Negative	Negative	Negative
Herpes simplex virus (HSV)1-HSV2 isolation	-	-	-	Negative
Mumps and enteroviral serology	-	Negative		Negative
Blood				
Leukocytes	17100	15400	14300	17800
Immune function study (cellular/ humoral/complement)	-	Normal	-	-
Blood culture	Negative	Negative	Negative	Negative
Cranial computed tomography	Gyral enhancement	-	-	Normal
Magnetic resonance imaging	-	Normal	-	Normal
Isotopic cisternogram	-	-	-	Normal

2. Pleocytosis in the CSF composed of endothelial cells, neutrophils and lymphocytes.

3. Development of episodes after symptom-free periods of weeks to months.

4. Spontaneous remission of symptoms and signs observed during the episodes.

5. Absence of a detectable etiological agent.

Our patient had meningitis episodes composed of meningismus, fever and headache, all of which had recurred at intervals of 2 weeks to 6 months, with remittance of all symptoms within 48-72 hours without any sequelae. All the episodes demonstrated a significant amount of pleocytosis with a predominance of neutrophils in the CSF; therefore, bacterial meningitis could not be definitively ruled out. Large endothelial cells (Mollaret cells), known to originate from monocytes/macrophages, were not observed in our patient. They are typical but not pathognomonic, and they may not be present. Thus, our patient was diagnosed as Mollaret meningitis[2,8].

Herpes simplex virus (HSV) type 2 is mentioned as one of the leading causes of Mollaret meningitis. Dylewski et al.[6] found only six patients as negative for HSV type 1 or 2 among a group of 58 cases with Mollaret meningitis. The pathogenesis of recurring HSV type 2 meningitis is not clearly known; however, reactivation of the latent virus nested in the sensory posterior root ganglions is suspected to be responsible.

Spinal and cerebral epidermoid cysts are reported as a cause of Mollaret meningitis. Particularly among little children, those cysts are noted to be symptomatic; bacterial meningitis is seen in cases with dermal sinus tract, whereas aseptic meningitis is observed in absence of a dermal sinus tract. Other etiological causes include: Vogt-Koyanagi syndrome, Harada syndrome, Behçet disease, allergic diseases, familial Mediterranean fever, glioblastoma, sarcoidosis, and Whipple disease[9-11]

Herpes simplex virus (HSV)-1 and HSV-2, which are noted to be the most important etiologies among adults, were not determined in our patient. Moreover, cranial and spinal MR and computed tomography (CT) imagings and cisternograms carried out for detection of other possibilities, such as an anatomical defect or a tumor, showed no abnormality.

Mollaret meningitis is known to be a self-limiting disease. While the patient could not be

objectively evaluated in the first two episodes, both of which remitted within 48 hours, due to antibiotic usage, the dramatic improvement of the symptoms within 48-72 hours without any treatment in the following episodes was considered an important indicator for diagnosis of Mollaret meningitis.

To date, many drugs have been administered in the treatment and prophylaxis, but none of them has been proven to have an influence over the disease. Particularly in HSV-positive cases, acyclovir at prophylactic doses is reported to be effective. Moreover, there are different reports on the efficacy of colchicine therapy. Due to the absence of HSV virus in our patient, she was administered colchicine after the fourth episode and to date has experienced no other meningitis episode[12-16].

In conclusion, Mollaret meningitis is a rare disorder that should be considered in all persons with recurrent aseptic meningitis. Earlier recognition of this disorder may prevent the repeated expensive diagnostic investigations. A curative treatment or effective long-term prophylaxis for all patients does not exist; thus, new studies should be done to provide appropriate data.

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