Oculomotor Apraxia

WHAT IS OCULOMOTOR APRAXIA?

Ocular motor apraxia (OMA) is a neurological disorder that causes problems with voluntary horizontal eye movement. Children with this condition have difficulty moving their eyes in a desired direction. In other words, their saccades (the quick, simultaneous movement of both eyes in the same direction) are abnormal. Because of this, patients with OMA have to turn their head quickly in order to start following objects in side gaze. They often thrust their head well past the object of interest and once the object is in view, then their head will return to its normal position. Head thrusts can be seen in early infancy but may not be appreciated until 6 months old. Typically, up and down (vertical) eye movements are unaffected.

WHAT CAUSES OMA?

The source of OMA is in the central nervous system (brain). The process of initiating eye movements is a complicated neural pathway involving many different structures. Imaging of the brain with magnetic resonance imaging (MRI) is commonly performed when evaluating OMA. Findings may be normal or may reveal poor development of regions of the brain, in particular: the corpus callosum, cerebellum, and/or fourth ventricle. OMA can be an isolated condition, genetic, or associated with other syndromes.

- Idiopathic congenital OMA is referred to as Cogan-type and is often associated with developmental delay. Risk factors include gestational and perinatal problems.
- Cases have been reported in older individuals after lesions in parts of the brain.
- Associated conditons. OMA has been described in a wide range of clinical entities, including metabolic and neurodegenerative conditions. A few examples include: ataxia with oculomotor apraxia, ataxia-telangiectasia, vitamin E deficiency, Gaucher's disease, and Joubert syndrome.

WHAT OTHER DEVELOPMENTAL PROBLEMS CAN COEXIST WITH CONGENITAL (COGAN) OMA?

Children with congenital OMA often have developmental delays and low muscle tone (hypotonia). Speech, reading, and motor delays are common even when imaging studies of the brain are normal.

IF A CHILD HAS OMA, DO SIBLINGS OR FUTURE CHILDREN HAVE A RISK FOR THE CONDITION?

The genetics of OMA are not well understood and may be multifactorial. Isolated OMA is generally considered non-hereditary and would not be associated with an increased risk of siblings or other family members developing this condition. However, a number of genetic mutations have been identified which cause OMA in addition to other clinical features. Siblings would be at increased risk of developing the condition in these cases, but the inheritance patterns can be variable.

WHAT IS THE TREATMENT FOR OMA?

There is no specific treatment for OMA. However, if a child has OMA, parents should be aware of potential developmental delays that can be associated with this condition and may benefit from occupational, speech, and physical therapy. Treatment of OMA secondary to an underlying disorder should be focused on treatment of that disorder. Regular ophthalmologic examinations are recommended to monitor for other eye problems that can be associated with OMA.

DOES OMA IMPROVE OVER TIME AND RESOLVE?

OMA symptoms do not worsen over time, in fact the head thrusts typically get better with age as the child learns to compensate for the limitation of their eye movements.

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