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**Topic:** Pediatric Optometry  

**Abstract Title:** Spasmus Nutans: An Asymmetric Nystagmus Presenting in Infancy and Early Childhood  

**Abstract:** Spasmus nutans is a rare form of nystagmus presenting in infancy with a triad of asymmetric nystagmus, head nodding, and torticollis. In infants presenting with asymmetric nystagmus without ocular pathology, neuro-imaging should be strongly considered.  

I. **Case History**  
   a. 9 month old African American Female  
   b. Chief Complaint: Eyes shaking right eye > left eye since birth.  
      o Stable  
      o Associated head nodding and head turning  
      o Not constant, but occurs frequently throughout the day  
      o (-) squinting, (-) eye turn, (-) tearing  
      o Presents for first eye exam  
   c. Patient was born at 36 weeks gestation with uncomplicated delivery  
      o Spent 3 weeks in NICU, then released  
   d. Negative personal medical history  
   e. Negative family medical and ocular history  
      o Negative family history of nystagmus  
   f. No Medications  
   g. NKMA  

II. **Pertinent Findings**  
   a. VA’s: 20/150 OD, 20/150 OS, and 20/150 OU measured with Teller forced choice preferential looking visual acuity cards  
   b. Pupils: PERRL OD, OS; (-) APD OD, OS  
   c. CT: Orthophoria at near  
   d. Bruckner: Equal bright red reflex OD, OS  
   e. Hirschburg: Aligned OD, OS  
   f. Confrontation fields: Grossly Full OD, OS  
   g. IOP: Soft and equal upon palpation OD, OS
h. EOM’s: No restrictions, Small amplitude pendular nystagmus OU, greatest in right gaze, OD > OS
   i. During examination, for a moment, the OD presented with rapid jerk nystagmus while the OS was steady.
   i. Dry Retinoscopy: +1.25 OU
j. Anterior Segment: No pathology; grossly normal
k. Posterior segment: Flat and intact maculae OU; Sharp optic nerve margins OU.

- Physical: Head nodding and head turning
- Radiological studies: MRI Scheduled

III. Differential Diagnosis
   a. Primary: Spasmus Nutans
   b. Congenital Nystagmus
   c. Chiasmal glioma
   d. Anterior visual pathway glioma
   e. Optic nerve glioma
   f. Achromatopsia
   g. Opsoclonus-myoclonus

IV. Diagnosis and Discussion
   a. Spasmus nutans is a rare condition that presents from infancy to early childhood. It is characterized by a clinical triad of asymmetric nystagmus, head nodding, and torticollis. The pattern of nystagmus is variable. It may be monocular or binocular. If it is binocular, it typically is asymmetric or alternating. Spasmus nutans is clinically distinguishable from congenital nystagmus, but it is not from spasmus nutans-like nystagmus caused by intracranial pathology or ocular disease (Gottlob 1990). Therefore, spasmus nutans is a diagnosis of exclusion. Intracranial pathology and retinal/optic nerve pathology must be ruled out before arriving at a definitive diagnosis of spasmus nutans.
   b. Expound on Unique Features
      i. A few key features distinguish congenital nystagmus from spasmus nutans. The primary differentiation is the asymmetric nature of spasmus nutans. In spasmus nutans, the nystagmus may be asymmetric in amplitude as well as out of phase between the two eyes (Gottlob 1990). Furthermore, in spasmus nutans, the OKN response is generally intact. In congenital nystagmus, the OKN response is typically reversed or otherwise abnormal. Spasmus nutans is intermittent while congenital nystagmus tends to be consistent (Gottlob 1990).

V. Treatment and Management
   a. Treatment and response to treatment
i. The patient was referred to a local pediatric hospital for an MRI with and without contrast under IV sedation to rule out intracranial pathology. The MRI is scheduled to occur after the writing of this abstract. Follow up examination at an internal clinic is also scheduled after the writing of this abstract.

b. Refer to research where appropriate

i. Head nodding and head turning activate the intact vestibulo-ocular reflex in spasmus nutans children, which stabilizes vision and equalizes the nystagmus between the two eyes. (Gottlob 1992). One study followed ten children with a diagnosis of spasmus nutans for an average age of seven years. The study found that esotropia and dissociated vertical deviation were common (Gottlob 1995). Out of the ten patients, three achieved normal stereovision. Four out of ten measured 20/20 in both eyes, and only one out of ten was 20/50 in both eyes (Gottlob 1995).

c. Bibliography


VI. Conclusion

a. Spasmus nutans and spasmus nutans-like nystagmus often first present to an eye care provider for initial evaluation. Some studies have reported the incidence of intracranial pathology associated with asymmetric nystagmus with the clinical features of head nodding and head turning to be as high as fifty percent (Shawkat 2001). Therefore, timely neuroimaging is warranted in all cases of nystagmus consistent with spasmus nutans. Careful follow up is necessary in spasmus nutans patients at they mature due to the risk of amblyopia and strabismus. A low vision referral should be considered if indicated, as well as any recommendations for educational accommodations.