Detailed Magnetic Resonance Imaging Findings of the Ocular Motor Nerves in Duane’s Retraction Syndrome

1. The common features of Duane’s retraction syndrome include all of the following EXCEPT:
   A. Marked limitation of abduction.
   B. Limitation of adduction.
   C. Retraction of the globe and narrowing of the palpebral fissure on abduction.
   D. Congenital nonprogressive horizontal ophthalmoplegia.

2. Inverse Duane’s retraction syndrome is characterized by the following feature:
   A. Elevation on adduction.
   B. Depression on adduction.
   C. Retraction of the globe and narrowing of the palpebral fissure on attempted abduction.
   D. Retraction of the globe and narrowing of the palpebral fissure on adduction.

3. To assess the neuroanatomic characteristics of Duane’s retraction syndrome, magnetic resonance imaging examination should include all the following EXCEPT:
   A. The limbs.
   B. Brain stem.
   C. Cavernous sinus.
   D. Orbit.

4. The most common presentation of Duane’s retraction syndrome in magnetic resonance imaging findings is:
   A. Hypoplasia or absence of the abducens nerve.
   B. Hypoplasia of the oculomotor nerve.
   C. Hypoplasia of the medial rectus muscle.
   D. Hypoplasia of the lateral rectus muscle.

5. Duane’s retraction syndrome is frequently associated with other congenital anomalies in approximately:
   A. 10% of cases.
   B. 30% of cases.
   C. 60% of cases.
   D. 5% of cases.

6. The characteristics of Okihiro syndrome include all of the following EXCEPT:
   A. Duane’s retraction syndrome.
   B. Duane’s retraction syndrome radial ray anomaly.
   C. Cataracts.
   D. Sensorineural deafness.

INSTRUCTIONS
1. Review the stated learning objectives on the first page of the CME article and determine if these objectives match your individual learning needs.
2. Read the article carefully. Do not neglect the tables and other illustrative materials, as they have been selected to enhance your knowledge and understanding.
3. The following quiz questions have been designed to provide a useful link between the CME article in the issue and your everyday practice. Read each question, choose the correct answer, and record your answer on the CME REGISTRATION FORM at the end of the quiz.
4. Type or print your full name and address and your date of birth in the space provided on the CME REGISTRATION FORM.
5. Complete the Evaluation portion of the CME Registration Form. Forms and quizzes cannot be processed if the Evaluation portion is incomplete. The Evaluation portion of the CME Registration Form will be separated from the quiz upon receipt at JOURNAL OF PEDIATRIC OPHTHALMOLOGY & STRABISMUS. Your evaluation of this activity will in no way affect the scoring of your quiz. NO PAYMENT REQUIRED. You may be contacted at a future date with a follow-up survey to this activity.
6. Indicate the total time you spent on this activity (reading article and completing quiz). Forms and quizzes cannot be processed if this section is incomplete. All participants are required by the accreditation agency to attest to the time spent completing the activity.
7. Send the completed form to: JOURNAL OF PEDIATRIC OPHTHALMOLOGY & STRABISMUS CME Quiz, PO Box 36, Thorofare, NJ 08086.
8. Be sure to mail the CME Registration Form on or before the deadline listed. After that date, the quiz will close. CME Registration Forms received after the date listed will not be processed.

METHOD FOR OBTAINING CREDIT CERTIFICATE
Your answers will be graded and you will receive a certificate via mail within 4 to 6 weeks advising you whether you have passed or failed. A score of at least 80% is required to pass. Unanswered questions will be considered incorrect.

CME ACCREDITATION
This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of Vindico Medical Education and the Journal of Pediatric Ophthalmology & Strabismus. Vindico Medical Education is accredited by the ACCME to provide continuing medical education for physicians.

Vindico Medical Education designates this educational activity for a maximum of 1 AMA PRA Category 1 Credit™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

FULL DISCLOSURE POLICY
In accordance with the Accreditation Council for Continuing Medical Education’s Standards for Commercial Support, all CME providers are required to disclose to the activity audience the relevant financial relationships of the planners, teachers, and authors involved in the development of CME content. An individual has a relevant financial relationship if he or she has a financial relationship in any amount occurring in the last 12 months with a commercial interest whose products or services are discussed in the CME activity content over which the individual has control. Relationship information appears prior to the content.

UNLABELED AND INVESTIGATIONAL USAGE
The audience is advised that this continuing medical education activity may contain references to unlabeled uses of FDA-approved products or to products not approved by the FDA for use in the United States. The faculty members have been made aware of their obligation to disclose such usage.

TARGET AUDIENCE
This CME activity is primarily targeted to pediatric ophthalmologists and ophthalmic surgeons. There are no specific background requirements for participants taking this activity.
7. Although most cases of Duane’s retraction syndrome are sporadic, familial cases may constitute approximately:

A. 20%.
B. 1%
C. 5%
D. 10%

8. Duane’s retraction syndrome could be confused with all of the following EXCEPT:

A. Infantile esotropia.
B. Abducens nerve palsy.
C. Congenital ocular motor apraxia.
D. Moebius syndrome.

9. All of the following could be the reason for the abnormal horizontal eye movements in patients with Duane’s retraction syndrome EXCEPT:

A. Lateral rectus paralysis.
B. Abnormal innervation of the extraocular muscles.
C. Co-contraction of the lateral and medial rectus muscles.
D. Abnormal extraocular muscle anatomy.

10. Possible causes of Duane’s retraction syndrome include all of the following EXCEPT:

A. A miswiring of the medial and lateral rectus muscles.
B. Lack of the abducens nerve.
C. Abducens nerve palsy.
D. Abnormalities in chromosomes.

Black out the correct answers

1. A B C D
2. A B C D
3. A B C D
4. A B C D
5. A B C D
6. A B C D
7. A B C D
8. A B C D
9. A B C D
10. A B C D

Number of hours you spent on this activity ________________________
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Deadline for mailing: For credit to be received, the envelope must be postmarked no later than September 15, 2010.

Evaluation (must be completed in order for your CME Quiz to be scored)

SEPTEMBER/OCTOBER 2009

Check the appropriate box below.

1. The content of the article was accurately described by the learning objectives.
   a. To evaluate the magnetic resonance imaging characteristics of Duane's retraction syndrome and inverse Duane's retraction syndrome.
   b. To analyze the aberrant branches in the orbits associated with the abnormal eye movement.
   c. To describe the magnetic resonance imaging characteristics of congenital malformations of the inner ear associated with Duane's retraction syndrome.
   d. If you answered yes, list one new thing you learned as a result of this activity ________________________________

2. This activity will influence how I practice ophthalmology.
   a. Please rate the degree to which the content presented in this activity was free from commercial bias.

   No bias 5 4 3 2 1
   Significant bias Comments regarding commercial bias __________________________

3. The quiz questions were appropriate for assessing my learning.

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   No bias 5 4 3 2 1
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5. Please list topics you would like to see future CME activities address: ____________________________________________

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