ABSTRACTS

Neuro-Ophthalmic Literature Review

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DOMINANT OPTIC ATROPHY DUE TO OPA1 MUTATIONS IN THE NORTH OF ENGLAND

Yu-Wai-Man P, Griffiths PG, Burke A, Sellar PW, Clarke MP, Gnanaraj L, Ah-Kine D, Hudson G, Czermin B, Taylor RW, Horvath R, Chinnery PF. The prevalence and natural history of dominant optic atrophy due to OPA1 mutations. *Ophthalmology* 2010;117:1538–1546, 1546.e1.

Autosomal dominant optic atrophy (DOA) is one of the commonest inherited optic neuropathies. Most of the DOA cases have mutations in the OPA1 gene (3q28–q29). Mutations in the OPA3 gene (19q13.2–13.3) can also cause optic atrophy. Although the natural history of DOA is well described, there are no prevalence figures of molecularly confirmed cases in the general population. In this study, the authors performed a population-based epidemiologic and molecular study of presumed DOA in the North of England, which has a relatively stable population. Seventy-six patients with clinical DOA were identified from their Neuro-Ophthalmology and Neurogenetics databases. They underwent OPA1 genetic testing using a polymerase chain reaction–based sequencing strategy. If a patient was negative for OPA1 mutation, they were screened for large-scale OPA1 rearrangements and OPA3 mutations. Affected family members were identified through contact tracing. They found OPA1 mutations in 57.6% amongst probands with a positive family history of optic atrophy and 14.0% amongst singleton cases. No OPA3 mutations were found. The minimum point prevalence of DOA in the North of England was 2.87 per 100,000 (or 2.09 per 100,000 for OPA1-positive cases), which is comparable to the prevalence of Leber hereditary optic neuropathy in the same area (3.22 per 100,000). The authors then went on to describe the natural history of OPA1+ DOA: the mean age of onset of visual loss was 7.0 years, with a mean rate of visual loss of 0.032 logMar/year (equivalent to 1.5 ETDRS letters/year), but there were large inter- and intrafamilial variability in disease severity.

Carmen Chan

PATIENTS WITH OPA1+ DOMINANT OPTIC ATROPHY HAVE SMALLER OPTIC NERVE HEADS

Barboni P, Carbonelli M, Savini G, Foscari B, Parisi V, Valentino ML, Carta A, Negri AD, Sadun F, Zeviani M, Sadun AA, Schimpf S, Wissinger B, Carelli V. OPA1 mutations associated with dominant optic atrophy influence optic nerve head size. *Ophthalmology* 2010;117:1547–1553.

In this cross-sectional study, the authors identified 28 patients with dominant optic atrophy (DOA) from 11 pedigrees with OPA1 mutations. Their optic disc areas were measured with optical coherence tomography (StratusOCT Fast Optic Disc acquisition protocol) and compared with 56 age-matched controls. They found, as a group, the patients with OPA1+ DOA have significantly smaller disc areas and vertical and horizontal disc diameters compared with controls. There were also variations of disc sizes depending on the mutation and a missense mutation linked to a 'DOA plus' phenotype had the smallest optic disc. The authors postulated that a small optic nerve head may have a role in the pathogenesis of DOA, for example through axonal crowding or DOA patients may have a smaller number of axons at birth.

Carmen Chan

NEURO-OPHTHALMIC COMPLICATIONS OF OCULAR AND NONOCULAR SURGERY

Berg KT, Harrison AR, Lee MS. Perioperative visual loss in ocular and nonocular surgery. *Clin Ophthalmol* 2010;4:531–456.

The authors performed a detailed review of the English literature, published after 1970, on the subject of perioperative visual loss (POVL) after ocular and non-ocular surgery. For non-ocular surgery, POVL typically resulted from anterior/posterior ischaemic optic neuropathies (ION), central retinal artery occlusion (CRAO), pituitary apoplexy or cortical blindness. The risk of POVL was highest after cardiac (0.09%–0.113%) or spinal surgery (0.09%–0.2%). The risk factors for ION include anaemia, hypotension and blood loss. More than half of the reported patients were bilaterally affected. CRAO almost always occurred after spinal surgery due to the prone position and the use of headrests causing ocular compression. All reported cases were unilateral. Cortical blindness may be caused by embolism or cerebral hypoperfusion. Pituitary apoplexy most commonly occurred in patients with pre-existing pituitary adenomas following cardiac surgery, complicated by blood pressure/intracranial pressure fluctuations, haemodilution, anticoagulation etc. Out of all the causes of POVL after non-ocular surgery, only pituitary apoplexy is likely to benefit from treatment and therefore it needs to be actively excluded. For ocular surgery, POVL due to intraocular complications (globe rupture, retinal detachment, endophthalmitis, CRAO and CRVO, intraocular haemorrhage etc.) and orbital surgery were excluded. Only ION and direct nerve trauma were included. The authors identified five reported cases of direct nerve trauma (most common after retrobulbar injection), 43 cases of anterior ION and 5 cases of posterior ION (most common after cataract extraction and Lasik). Although the exact incidence of POVL after ocular surgery is not known, it seemed to be less common than after non-ocular surgery.

Carmen Chan

RAREBIT PERIMETRY FOR BEDSIDE TESTING

Steven Houston SK, Weber ED, Koga SF, Newman SA. Rarebit perimetry for bedside testing: comparison with standard automated perimetry. *J Neuroophthalmol* 2010;30:243–247.

Standard automated perimetry (SAP; e.g. Humphrey field analyzer) is an essential tool for Neuro-Ophthalmologists; however, the apparatus is not portable. Ophthalmologists are frequently asked to assess hospital inpatients who might be bed-bound. In this case, visual field (VF) examination can usually only be performed by the confrontation method, which is highly variable and suboptimal for detecting relative VF defects. Rarebit perimetry (RBP), developed by Dr Lars Frisén from Sweden in 2002, uses briefly exposed high-contrast microdots on a dark background to test the presence of vision in different locations of the VF. The results include a topographical display of the VF. RBP is a computer software which can be administered from a laptop computer at 0.5 m or 1 m distance, which means it can be used at the bedside. In this study, the authors tested the VF of 29 eyes of 15 hospital inpatients, with various neurological or neurosurgical disorders causing visual field defects, with RBP at the bedside. SAP was performed a few days later in the clinic and compared with the RBP results. They found that VFs corresponded between RBP and SAP in 21 (72%) of the 29 tested eyes. RBP detected defects in five subjects who had normal visual field results on SAP. SAP detected two defects not detected by RBP. The mean test duration per eye for RBP and SAP were 4 min 48 sec and 3 min 16 sec, respectively. All patients thought the ease of testing was the same for RBP and SAP but they all preferred RBP because it was more convenient. The authors concluded RBP could be an option for bedside VF testing.

Carmen Chan

THE FIRST RECORDED CASE HISTORY OF MULTIPLE SCLEROSIS

Landtblom AM, Fazio P, Fredrikson S, Granieri E. The first case history of multiple sclerosis: Augustus d'Esté (1794–1848). *Neurol Sci* 2010;31:29–33.

Augustus d'Esté was a grandson to the King George III of England and cousin to Queen Victoria. After the marriage of his parents was declared illegitimate they took the surname Esté. This derives from the Italian house of Este, from which the Hanoverians were descended. Augustus studied at Harrow and thence the army rising to the rank of lieutenant colonel. He kept a diary in which he recounted the neurological symptoms that he suffered from the age of 28, which have now been ascribed to multiple sclerosis. "...I was obliged to have my letters read to me, and their answers written for me as my eyes were so attacked that when fixed upon minute objects indistinctness of vision was the consequence. Until I attempted to read, or to cut my pen, I was not aware of my Eyes being in the least attacked. Soon after, I went to Ireland, and without anything having been done to my Eyes, they completely recovered their strength and distinctness of vision..." This historical article summarises the diary accounts. The authors have also guessed at his expanded disability status scale which they have graphed out, showing that he suffered a typical disease course of relapsing remitting disease going into secondary progression before his eventual death at the age of 54. During his life he consulted widely and received treatment at various spas throughout Europe. Such treatments included "electrification", physical exercises and the use of "tincture of Cantharidae", which is the active ingredient in the aphrodisiac "Spanish fly". All this goes to show that despite the many advances that have been made in the diagnosis of MS and the treatment of relapsing remitting disease, when it comes to progressive disease nothing much has changed in the last 150 years or so. Our patients still consult widely and will try anything in the hope of a cure. The only difference is that now the treatments are called "stem cells" rather than "tincture of..." The lack of efficacy is still the same.

Simon Hickman

EARLY ACCOUNTS OF OPTIC NEURITIS

Pearce JMS. Early observations on optic neuritis and Uhthoff's sign. *Eur Neurol* 2010;63:243–247.

In 1884, 36 years after Augustus D'Esté's death, Edward Nettleship, an Ophthalmologist at St Thomas's Hospital, London, wrote the first definitive description of optic neuritis. His account included the following: 'Failure of sight limited to one eye, often accompanied by neuralgic pain about the temple and orbit and by pain in moving the eye; many recover but permanent damage and even total blindness may ensue; there is at first little, sometimes no, ophthalmoscopic change, but the disc often becomes more or less atrophic in a few weeks...' The defect in vision is often described at first as a "gauze" or a "yellow mist" or a "dark patch" or a "spot" which covers the object looked at and gives an unnatural colour, the hand looking, for example, as if covered by a brown glove.' This pretty much sums it up. Dr. Pearce who wrote this article has a great interest in the history of Neurology. His papers are always well researched and clearly written. Here, he follows the history of optic neuritis from Nettleship through to Uhthoff, including the first description of what would be Uhthoff's most famous observation: 'At last I have to mention a phenomenon which I have observed in four cases, in which bodily exercise with fatigue caused a marked worsening of vision.' Pearce's account concludes with brief biographies of both Nettleship and Uhthoff.

Simon Hickman

BILATERAL AND RECURRENT OPTIC NEURITIS IN MS

Burman J, Raininko R, Fagius J. Bilateral and recurrent optic neuritis in multiple sclerosis. *Acta Neurol Scand* 2010 [Epub ahead of print] DOI: 10.1111/j.1600-0404.2010.01388.x

We know now that optic neuritis is a common presentation of multiple sclerosis (MS) but it can also occur as idiopathic disease, as part of neuromyelitis optica or some other inflammatory condition such as chronic relapsing inflammatory optic neuropathy (CRION). Often, there is recurrent or bilateral optic neuritis in these latter conditions. In this epidemiological survey, the authors identified 472 patients with diagnosis of MS from the Swedish MS Register. Twenty-one percent presented with optic neuritis. Of interest, 5.5% of patients had a second attack of optic neuritis before developing clinically definite MS and bilateral sequential optic neuritis occurred in 3.8%, although only two patients (0.42%) presented with bilateral simultaneous optic neuritis ON. The authors concluded that even in cases of sequential optic neuritis, the likelihood is that the patient will go on to develop MS, although

this was within the Swedish population, which is an area of high MS prevalence and is not as ethnically diverse as the United States or the United Kingdom, for example. Magnetic resonance imaging, lumbar puncture to look for oligoclonal bands and testing for aquaporin-4 antibodies are obviously of great predictive value in these patients.

Simon Hickman

OPTIC NEURITIS IN SINGAPORE

Lim SA, Sitoh YY, Chng SM, Boey PY, Goh KY. Magnetic resonance imaging in acute optic neuritis in Singapore. *Ann Acad Med Singapore* 2009;38:821–826.

This journal is proud of its international focus and encourages contributions from all over the world. It is of great interest to learn about the similarities and differences in the presentation of common Neuro-Ophthalmological conditions in different countries. Optic neuritis occurs worldwide but there does seem to be geographical variation in its aetiology. The presentation as a likely first attack of multiple sclerosis (MS) in Sweden has just been discussed. Here is an article from Singapore discussing whether patients presenting with optic neuritis had MS-like lesions on initial magnetic resonance imaging (MRI). Of 10 patients who had monosymptomatic optic neuritis, only 3 had clear brain lesions suggestive of MS, compared with 48.3% in the Optic Neuritis Treatment Trial. The results are in broad agreement with other studies performed elsewhere in South East Asia and reflects the lower prevalence of MS in the Asian population.

Simon Hickman

DRUGS MISUSE IN PREGNANCY AND INFANTILE VISUAL COMPLICATIONS

Hamilton R, McGlone L, MacKinnon JR, Russell HC, Bradnam MS, Mactier H. Ophthalmic, clinical and visual electrophysiological findings in children born to mothers prescribed substitute methadone in pregnancy. *Br J Ophthalmol* 2010;94:696–700.

The exposure to opiates, including methadone, and benzodiazepines during pregnancy has been related to ophthalmic abnormalities in children. This paper reviews a retrospective series of 20 infants exposed to methadone in utero referred to a national paediatric electrophysiology service. Children whose gestational age was under 32 weeks or with other diagnoses such as fetal alcohol syndrome or birth asphyxia were excluded. There was multi-drug exposure in 18 cases (90%), in addition, 60% of the group had received pharmacological treatment for neonatal abstinence syndrome (NAS). The most significant finding was the association between nystagmus and the treatment for NAS, in 11 out of 12. Only three out of eight children not receiving NAS treatment had nystagmus. Other abnormalities were reduced acuity, delayed visual maturation and strabismus in one third of children. Visual electrophysiological abnormalities were a frequent finding (60%). Delayed or absent peaks in flash and pattern VEPs were noted and attributed to methadone exposure.

Silvia Muñoz

ORBITAL BLOWOUT FRACTURE IN CHILDREN: WHEN AND HOW?

Carroll SC, Ng STJ. Outcomes in orbital blowout fracture surgery in children and adolescents. *Br J Ophthalmol* 2010;94:736–739.

The aim of surgical treatment of blowout fractures is the correction or minimisation of the enophthalmos or diplopia by repositioning or releasing displaced or entrapped orbital soft tissues. Many authors support urgent surgery in children in order to avoid soft tissue scarring and long-term complications. However, there is no clear consensus concerning surgical indications and the timing of surgery in this population. This paper presents a retrospective review of the outcomes in a group of 19 patients under the age of 20 years old. The mean interval from injury to surgery was 14 days (range 0–113). One month after surgery, 47% of patients were free of symptoms, whereas 37%

had only diplopia in extreme positions of gaze. So, in conclusion, this study supports that it is possible to obtain good results, despite the deferral of surgical treatment.

Silvia Muñoz

IMAGING THE OPTIC NERVE

Becker M, Masterson K, Delavelle J, Viallon M, Vargas MI, Becker CD. Imaging the optic nerve. *Eur J Radiol* 2010;74:299–313.

I recommend you to read this paper for the following reasons. First, because it is an excellent review of the typical imaging findings in most of the optic nerve diseases. Tumours and congenital, hereditary, toxic and nutritional, vascular, traumatic, degenerative, inflammatory and infectious disorders are nicely described. The pictures are clear and well informed to enlighten how a “neuropathy looks like”. Second, it correlates the clinical presentation of the different optic nerve disorders to the radiologic abnormalities. So, it is very useful to residents who are not very familiar yet with Neuro-Ophthalmology to deal with the differential diagnosis of optic neuropathies. Also, your Neuro-radiologist may appreciate it.

Silvia Muñoz

OPTIC PATHWAY GLIOMAS IN NF1

Segal L, Darvish-Zargar M, Dilenge M-E, Ortenberg J, Polomeno RC. Optic pathway gliomas in patients with neurofibromatosis type 1: follow-up of 44 patients. *JAAPOS*. 2010;14:155–158.

The authors retrospectively reviewed 331 paediatric cases of neurofibromatosis type 1 (NF1), 44 of whom (13%) had confirmed optic pathway glioma (OPG). The mean age at diagnosis was 3.1 years for NF1 and 6 years for OPG. Amongst patients with NF1 and OPG only 18% exhibited symptoms of OPG, namely precocious puberty (75%, average age 7 years) and/or decreased visual acuity (38%, average age 5.7 years). Of those with decreased visual acuity, only 20% had optic disc swelling or atrophy. The final outcome was good, with only 7% of the patients having less than 20/200 in at least one eye and with a survival rate of 100%. This study therefore confirms the revised guidelines for the follow-up of NF1 patients without an OPG: annual screening ophthalmological examinations until age 8 instead of 6 and then biannual examination until age 18. The average interval between NF1 and OPG diagnosis being 3 years, the authors also suggest close follow-up in the 5 years after the diagnosis of NF1. Annual weight and height measurements should obviously be performed in order to screen for precocious puberty. Contrary to the commonly accepted view that patients with retrochiasmal involvement (Dodge 3 stage) are more symptomatic than patients without, this study results show that only 22% of all retrochiasmal tumours were symptomatic, compared with 16% of those limited to the optic nerve and chiasm. This study is interesting because of the low risk of selection bias towards clinically symptomatic patients, as all NF1 patients systematically underwent routine MRI screening at diagnosis and then on a regular basis according to their age. If such a close imaging screening is most interesting for research purposes, it still does not seem possible to conclude whether or not it is useful in clinical practice, or merely stressful, expensive and useless. There is indeed again in this study no evidence that the earlier diagnosis allowed by MRI screening affected in any way the final outcome.

Matthieu Robert

SPONTANEOUS TRANSFORMATION OF AN OPTIC PATHWAY GLIOMA

Zoeller GK, Brathwaite CD, Sandberg DI. Malignant transformation of an optic pathway glioma without prior radiation therapy. *J Neurosurg Pediatrics* 2010;5:507–510.

The authors report the case of a 5-year-old boy without signs of NF1 and with a histologically proven suprasellar low-grade astrocytoma, who remained stable for 2 years after an initial subtotal resection surgery and

vincristine and carboplatin chemotherapy. It is of interest to notice that the initial lesion was “more compact and cellular than the classic pilocytic astrocytoma”. He rapidly deteriorated 2 years after initial presentation; the tumour had increased in size and frontal oedema was present. Histological analysis showed features of a malignant glioma. The child died after a few weeks despite surgery, chemotherapy and radiotherapy. There has been recent controversy to know whether optic pathway gliomas could undergo spontaneous transformation and it appeared that no such histologically proven cases had ever been reported and that all reported transformation cases were actually secondary to radiotherapy. For that reason, radiotherapy has now been abandoned in this indication. This case shows that spontaneous transformation of optic pathway gliomas may exceptionally occur.

Matthieu Robert

PAEDIATRIC HORNER AND CAROTID DISSECTION

Pirouzian A, Holz HA, Ip KC, Sudesh R. Acquired infantile Horner syndrome and spontaneous internal carotid artery dissection: a case report and review of literature. *J AAPOS* 2010;14:172–174.

The authors report the case of a 10-month-old girl with a recent history of oropharyngeal abscess secondary to a *S. pyogenes* pharyngitis with minimal vomiting present for 1 day, who presented with a complete, frank and acute left Horner syndrome, confirmed by cocaine testing. Head and thoracic CT scans and carotid ultrasounds were normal, whereas MRI and MRA showed signs of focal dissection of the distal cervical segment of the left internal carotid artery. In this case the diagnosis was suspected on the MR images but confirmed with the MRA; the authors then discuss the interest of CTA and MRA in paediatric Horner when previous work-up is negative.

Matthieu Robert

COULD OPHTHALMOPLEGIC MIGRAINE ACTUALLY BE A MIGRAINE?

Miglio L, Feraco P, Tani G, Ambrosetto P. Computed tomography and magnetic resonance imaging findings in ophthalmoplegic migraine. *Pediatr Neurol* 2010;42:434–436.

Few pathophysiological hypotheses have been more discussed than those concerning what has been known as “ophthalmoplegic migraine” since Jean-Martin Charcot coined this term in 1890. After more than a century of controversies, the entity has eventually left the big migraine family in 2004 in the International Classification of Headache Disorders (*Cephalalgia* 2004;24(Suppl 1):9). Microvascular ischaemia, inflammation and demyelination, either alone or in association, are now the most cited mechanisms for ophthalmoplegic migraine. It was probably time for migraine to arise again in the debate. Miglio et al. hypothesise a hypoxic-ischaemic breakdown of the blood-neural barrier because of vasospasm of the vasa nervorum at the site of the oculo-motor nerve root exit zone, during a migraine attack. This would cause vasogenic oedema, accounting for both the enlargement and the enhancement of the oculo-motor nerve at the root exit zone indeed observed in ophthalmoplegic migraine cases. The ensuing restoration of the neural-brain barrier would then lead these features to resolve. This paper shows that there is still no consensus in ophthalmoplegic migraine, but a migrainous aetiology remains possible.

Matthieu Robert

BENIGN UNILATERAL APRAXIA OF EYELID OPENING

Cherian V, Foroozan R. Benign unilateral apraxia of eyelid opening. *Ophthalmology* 2010;117:1265–1268.

The authors report a retrospective, observational case series of five patients with ptosis that occurred upon awakening and resolved after mechanical eyelid elevation (benign unilateral apraxia of eyelid opening).

No ocular cause for the ptosis was detected in any of these patients. The authors concluded that extensive evaluation is not warranted in these patients unless other neurologic or ocular findings are present. Apraxia of eyelid opening is usually a bilateral disorder and this is the first report of unilateral apraxia of eyelid opening.

Michael Vaphiades

ECTOPIC PITUITARY ADENOMA IN THE SPHENO-ORBITAL REGION

Wang H, Yu W, Zhang Z, Xu W, Zhang F, Bao W. Ectopic pituitary adenoma in the sphenoid-orbital region. *J Neuroophthalmol* 2010;30:135–137.

Pituitary adenomas rarely occur in extrasellar sites. The authors report the first documented case of an ectopic pituitary adenoma in the sphenoid-orbital region in a 66-year-old man who presented with unilateral proptosis and an ipsilateral abduction deficit. They theorize the tumour may have originated from Rathke pouch remnant cells in the lateral wall of the sphenoid sinus.

Michael Vaphiades

MIDBRAIN CLEFT AS A CAUSE OF CHRONIC INTERNUCLEAR OPHTHALMOPLEGIA, PROGRESSIVE ATAXIA, AND FACIAL WEAKNESS

Ahmad O, Reddel S, Lueck CJ. Midbrain cleft as a cause of chronic internuclear ophthalmoplegia, progressive ataxia, and facial weakness. *J Neuroophthalmol* 2010;30:145–149.

The authors report a 44-year-old man with progressive ataxia, facial weakness, bilateral adduction deficits, and abducting nystagmus from a developmental anatomic abnormality called a “midbrain cleft”. This midbrain version of a syrinx always manifests with a bilateral internuclear ophthalmoplegia (INO) in addition to other neurologic deficits, is progressive, often ignored on MRI, and there is no known effective treatment.

Michael Vaphiades

ACUTE RETROBULBAR OPTIC NEURITIS AND THE MORNING GLORY OPTIC DISC ANOMALY

Murphy MA, Janigian RH, Filippopoulos T, Tung GA. Acute retrobulbar optic neuritis and macular detachment associated with morning glory optic disc anomaly. *J Neuroophthalmol* 2010;30:123–125.

The authors report the first case of optic neuritis in a woman with morning glory optic disc anomaly and macular detachment evidenced on MRI and OCT. This case highlights the fact that profound visual loss from congenital disc anomalies may stem from other superimposed disorders like optic neuritis.

Michael Vaphiades

PEGYLATED INTERFERON ALPHA-ASSOCIATED OPTIC NEUROPATHY

Berg KT, Nelson B, Harrison AR, McLoon LK, Lee MS. Pegylated interferon alpha-associated optic neuropathy. *J Neuroophthalmol* 2010;30:117–122.

The authors report a 52-year-old man with chronic hepatitis C who presented with painless, bilateral, simultaneous nonarteritic anterior ischaemic optic neuropathy (NAION) and peripheral neuropathy. His symptoms began 19 weeks after starting peginterferon alpha-2a. The authors identified 23 additional cases of NAION during interferon

alpha therapy in the literature, at least 12 of which suffered bilateral NAION. The authors concluded that treatment with interferon alpha may result in NAION and discontinuation of therapy deserves consideration after weighing individual risks and benefits.

Michael Vaphiades

SHOULD STEROIDS BE OFFERED TO PATIENTS WITH NONARTERITIC ANTERIOR ISCHAEMIC OPTIC NEUROPATHY (NAION)?

Lee AG, Biousse V. Should steroids be offered to patients with nonarteritic anterior ischemic optic neuropathy? *J Neuroophthalmol* 2010;30:193–198.

This article is an informative spirited debate regarding the use of corticosteroids in patients with NAION. The recent literature and historical aspects of corticosteroid use, both oral and intravitreal, is reviewed. It is an important article for ophthalmologists who treat these challenging patients.

Michael Vaphiades

ATYPICAL IDIOPATHIC INTRACRANIAL HYPERTENSION

Bruce BB, Kedar S, Van Stavern GP, Corbett JJ, Newman NJ, Biousse V. Atypical idiopathic intracranial hypertension: normal BMI and older patients. *Neurology* 2010;74:1827–1832.

The authors retrospectively examined 407 consecutive adult patients with idiopathic intracranial hypertension (IIH). Eighteen patients (4%) had normal BMI and 19 (5%) were aged 50 years or older at the time of diagnosis. Medication-induced IIH was more frequent in patients with normal BMI. No IIH patient with a normal BMI had severe visual loss. Older patients with IIH had a lower BMI and were less likely to report headache as initial symptom and more likely to complain of visual changes. The authors concluded that IIH patients with normal body mass index and 50 years or older appear to have better visual outcomes than more typical IIH patients.

Michael Vaphiades

CORRELATION BETWEEN FUNCTIONAL AND STRUCTURAL ASSESSMENTS OF THE OPTIC NERVE AND RETINA IN MS

Almarcegui C, Dolz I, Pueyo V, Garcia E, Fernandez FJ, Martin J, Ara JR, Honrubia F. Correlation between functional and structural assessments of the optic nerve and retina in multiple sclerosis patients. *Neurophysiol Clin* 2010;40:129–135.

The authors studied the relationship between visual acuity, visual field, visual evoked potentials (VEPs), pattern electroretinogram (PERG), optical coherence tomography (OCT) and scanning laser polarimetry (GDx) in 19 multiple sclerosis (MS) patients and 19 age- and sex-matched controls. Significant differences between the groups were observed and the authors concluded that in MS patients, axonal loss in ganglion cells can be detected using these tests.

Michael Vaphiades

RADIAL DIFFUSIVITY IN REMOTE OPTIC NEURITIS DISCRIMINATES VISUAL OUTCOMES

Naismith RT, Xu J, Tutlam NT, Trinkaus K, Cross AH, Song SK. Radial diffusivity in remote optic neuritis discriminates visual outcomes. *Neurology* 2010;74:1702–1710.

The authors' goal was to test whether diffusion tensor imaging could correlate with visual loss from a remote episode of optic neuritis (ON) in 70 subjects with a history of ON ≥ 6 months ago. A variety of vision tests performed including optical coherence tomography and visual evoked potentials. They found that increased optic nerve radial diffusivity (RD) detected by diffusion tensor imaging was associated with a proportional decline in vision after ON and furthermore RD could discriminate between categories of visual recovery within affected eyes.

Michael Vaphiades