Optic neuritis in child: Clinical and therapeutic particularities

Layouni A, Tej A, Kebaili R, Tilouch S, Kahloul N, Bouguila J, boughammoura L
Pediatric ward, Farhat Hached University Hospital, Sousse, Tunisia

Abnormality	Number
Low amplitude	2
Latency prolongation	2
Absence of any response	1

PEV abnormalities

abnormally low amplitude and prolonged latency of the P100

Central scotoma

- two voluminous bilateral fronto-temporal lesions in hyper T2.
- left frontal cortical signal abnormality extending to the knee of the corpus callosum.

Introduction: The pediatric population with ON has clinical and paraclinical specificities. The most common etiology, as in the adult population, is multiple sclerosis.

Objectifs: Describe the clinical features and visual outcomes of optic neuritis.

Methods: We conducted a retrospective analysis of children less than 15 years of age presenting with optic neuritis between 2012 and 2017.

Results:

- 6 cases collected: 100% ♂
- Average age: 11 years (range from 8 to 15 years old)
- Reason for consultation:
 - Decrease in visual acuity: 100% of cases (bilateral in 5 cases)
 - Periorbital pain: 1 case
- Neurological examination:

- Decrease in visual acuity: 100% of cases (4 cases < 7/10).
- Fundus exam: papilledema (1 case) retro-bulbar neuritis (2 cases)
- Visual field: scotoma (3 cases) enlargement of the blind task (1 case)
- PEVs were altered in 4 cases.
- LP: pleocytosis (1 case) hyperproteinorrachia (2 cases).
- biology: anti EBV antibodies was high (1 case) anti-MOG antibodies positive (1 case).
- MRI: inflammatory demyelinating lesion (4 cases) isolated medullary involvement (1 case).
- Etiologies:

- Treatment: methylprednisolone: 100% of cases other specific treatments (azathioprine and interferon β 1a).
- Recurrence in 50% of cases (délai: 19j à 8 mois).
- Visual sequelae: decreasing visual acuity (2 cases) progression to optic atrophy (2 cases)
- satisfactory visual recovery >8/10: 6 eyes out of 12.

Discussion:

- Average age: 10,9 ans.
- Female predominance: 55 à 62%.
- Precipitating factors: Post infectious factors Live virus vaccine.
- Clinical presentation: ↘ in visual acuity ocular pain.
- Bilateral optic neuritis: 40 à 45%.
- Color vision: dyschromatopsia of the red-green axis.
- PEV: abnormal in 45 à 55% of cases.
- cerebral spinal fluid: presence of oligoclonal bands in 10% of cases.
- MRI: abnormal in 46% of cases.
- Etiologies:
 - ✓ Multiple sclerosis
 - ✓ Acute disseminated encephalomyelitis
 - ✓ Neuromyelitis optica
 - ✓ Leber hereditary optic neuropathy
 - ✓ Tumor/compressive/ischemic causes.
- Follow-up: Recurrence in 25%. Progression to multiple sclerosis in 25 to 35%.
- Prognostic factors for developing multiple sclerosis:
 - ✓ female gender
 - ✓ recurrent attacks
 - ✓ HLA typing DR2-B7-DR4
 - ✓ age of occurrence of the first attack beyond the age of 10
 - ✓ brain MRI abnormalities
 - ✓ number of lesions.

Treatment:

methylprednisolone for 3 days followed by oral prednisolone (1mg/Kg/j) for 11 days, and a 3-day tapering of prednisolone thereafter.

recovered vision faster
reduced the risk of developing multiple sclerosis.

Conclusion:

The ON of the child remains rare. ON may be the first manifestation of a demyelinating CNS pathology. Corticosteroid therapy allows a favorable recovery in the majority of ON outbreaks.

Bibliographie: B. Roussat. Les neuropathies optiques aiguës de l'enfant : particularités cliniques et thérapeutiques. À propos de 28 yeux chez 20 enfants. <http://www.em-consulte.com/en/article/111495>
Banwell B, Ghezzi A, Bar-Or A, Mikaeloff Y, Tardieu M. Multiple sclerosis in children: clinical diagnosis, therapeutic strategies, and future directions. Lancet Neurol. oct 2007;6(10):887-902.