OPTIC NEURITIS

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- An acute inflammatory disorder of the optic nerve
- Typically presents with sudden monocular visual loss and eye pain
- In young adults, more commonly in women
- A common initial manifestation of multiple sclerosis (MS)

OPTIC NEURITIS

CLASSIFICATION:

ETIOLOGICAL:

a. Idiopathic

b. Demyelination

c. Infections (viral) etc.

d. Para infections/Post viral syndrome

e. Toxic-Drugs

f. Intraocular inflammations

g. Contiguous inflammations (Sinus, Orbit)

h. Systemic disease-sarcoid, T.B, Syphilis

❖Para infectious-after viral infections, immunization

❖Infections-viral infections, cat scratch fever, syphilis, Lyme disease

AIDS usually causes-Neuroretinitis

- Drugs-Ethambutol, Isoniazid, Interferon, Chloramphenicol
- I.O. Inflammations: Uveitis, APMPPE
- Sinus related-Headache + ENT opinion

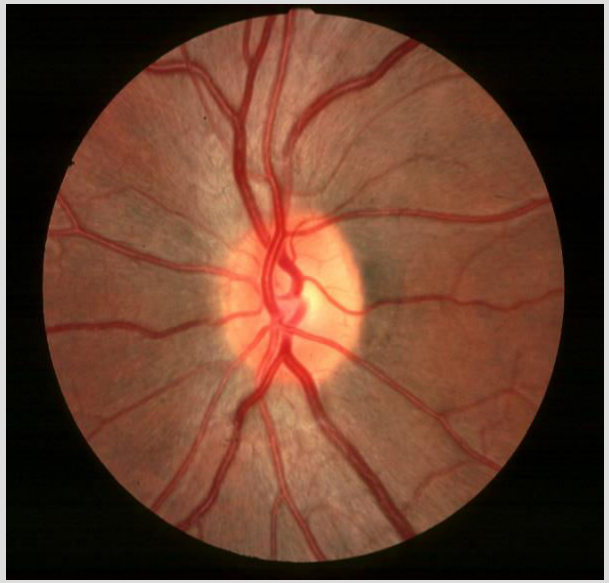
OPTIC NEURTIS

CLINICAL TYPES

- Retrobulbar (1/3rd cases)
- Papillitis (1/3rd cases)
- Neuroretinitis

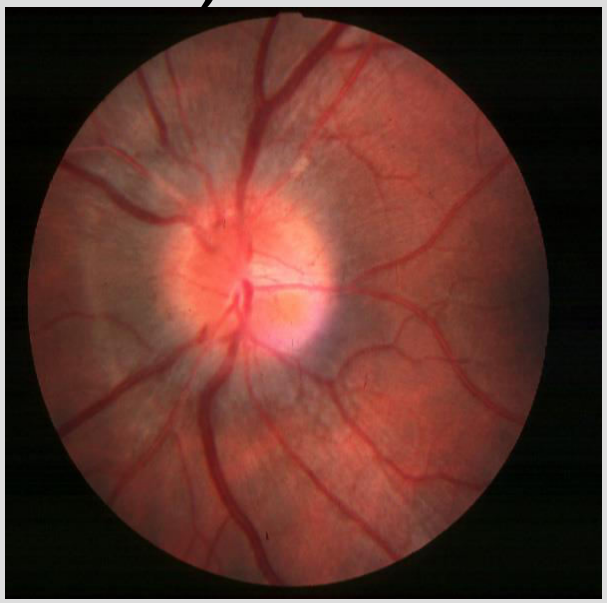
Classification of optic neuritis

Retrobulbar neuritis (normal disc)



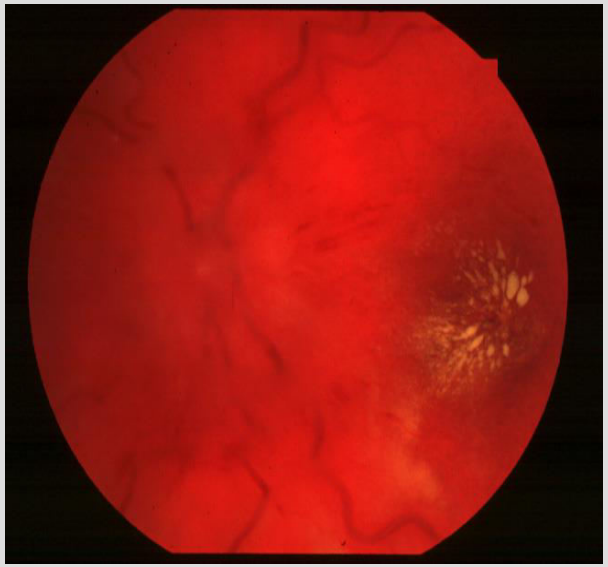
- Demyelination - most common
- Sinus-related (ethmoiditis)
- Lyme disease

Papillitis (hyperemia and oedema)



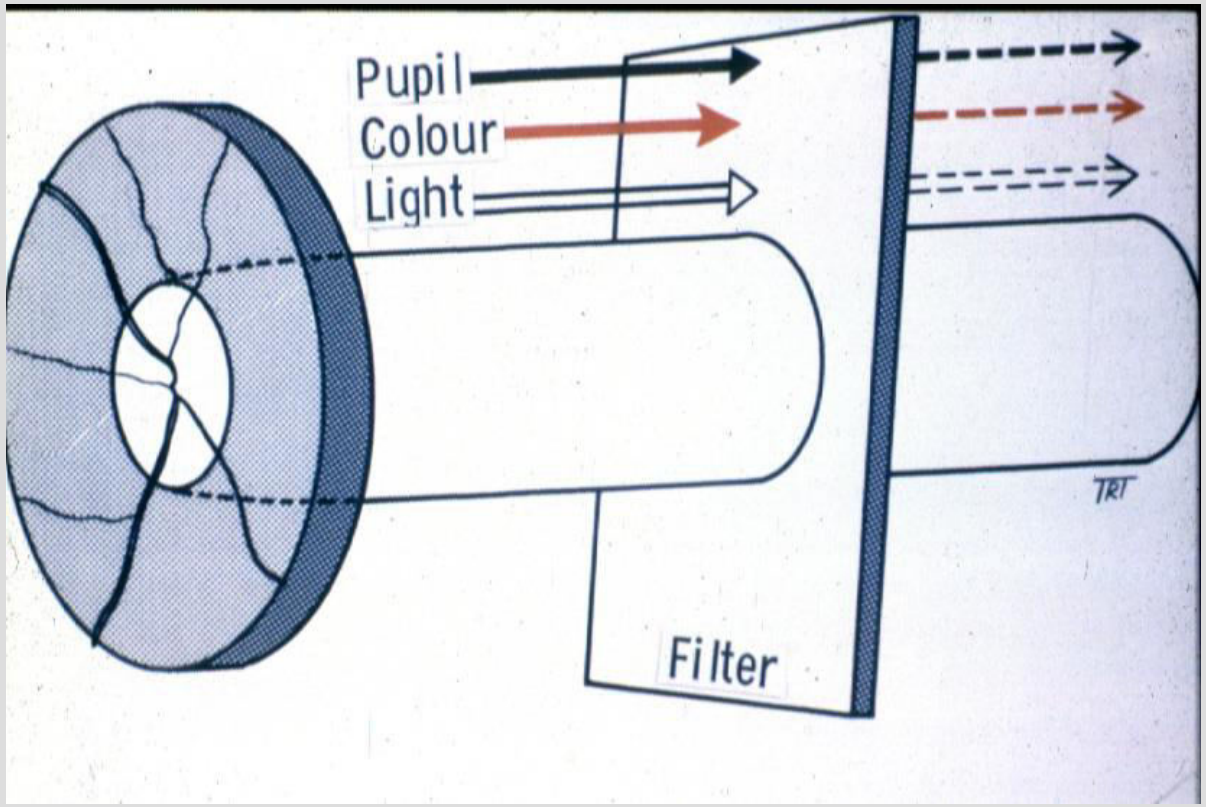
- Viral infections and immunization in children (bilateral)
- Demyelination (uncommon)
- Syphilis

Neuroretinitis (papillitis and macular star)



- Cat-scratch fever
- Lyme disease
- Syphilis

Signs of optic nerve dysfunction



- Reduced visual acuity
- Afferent pupillary conduction defect
- Dyschromatopsia
- Diminished light brightness sensitivity

SYMPTOMS: Triad

- ❖Loss of vision
- ❖Ipsilateral eye pain
- ❖Dyschromatopsia

70% - initially unilateral

30% - 2nd eye may get involved

(1) Loss vision: 58% - isolated symptom

Range – 6/6 – PL-ve

Vision decreases for 10-14 days

Stabilize – Improvement (2-3 months)

(II) PAIN: Ipsilateral eye pain – 88%
with eye movements – 21% "Dull ache" in/behind the eye – 62% headache (involved region) 22% generalized headache- 13%
Pain – cause unknown with in 24 hrs. then recovers in 48-72 hrs.

O.N.T.T. (Pain) – 92% cases.

Persistent Pain 5 days – Atypical

(III) DYCHROMATOPSIA: Impaired color vision
Color desaturation – No macular lesions highly suggestive of O.N disease.
Color defect – worse than expected.

OTHER FEATURES:

1) **RAPD:-** Ipsilateral – Neutral density filter

2) **CONTRAST SENSITIVITY:** Most sensitive (Even if V.A 6/6)

3) **VISUAL FIELD DEFCTS:** Central scotoma – may be altitudinal, arcuate, diffuse etc.

4) **PULFRCH EFFECT:** Pendulum movements appears elliptical when observed in front of eyes. [Delayed transmission + weak stimulation]

5) **UHTHOFF'S SYMPTOM:** episodic transit worsening of vision with exertion [Exertion, hot food/drink, Tired end day] Recovery – within 5-6 min/sometimes 2hrs. Pts with Uhthoff's – Higher incidence of MS, May be present in lebers optic N, Toxic optic N (Chloramphenicol).

6) **INVERSE UHTHOFF's SYMPTOM** – Improved vision with exercise, beer etc.

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7) Visual obscuration in bright light: O.N Pts vision in bright light – see better in dim light.

8) **MOVEMENT PHOSPHENES:**

Phosphenes: Seeing brief flash of light (1-2 sec). Almost exclusively and horizontal eye movements better seen in dark/dim room with closed eyes ipsilateral and unilateral suggests demyelination

9) **SOUND PHOSPHENES:** Produced by sudden noise when pt. is resting in the dark. May occur in optic neuritis or compressive neuropathy

PROGNOSIS: 75 – 6/9 OR BETTER V.A

- 85% 6/12 OR BETTER V.A

- Color vision, contrast sensitivity, light brightness appreciation often
- remain abnormal. Mild RAPD may stay and optic atrophy may start.

OPTIC NEURTIS TREATMENT TRIAL:

- Multicentered, Randomized, Prospective clinical trial – 457 cases of
- O.N (81-45 years- Acute O.N for 8 days + visual)
- Field defects + RAPD – Included (Typical)

OPTIC NEURITIS TREATMENT TRIAL

- I): Oral prednisone – 1 mg/kg/day – 14 days
- II): I/V Methyl prednisolone (1000 mg/day) for 3 days f/b oral prednisone (1mg/kg/day) for 11 days.
- III): Oral placebo for 14 days.

OPTIC NEURITIS TREATMENT TRIAL

Results

- Oral steroids – recurrence of O.N in affected or contralateral eye.
- I/V steroids → Fast recovery of vision for the first year but then after no difference.

TREATMEMT:

- Mild cases – No treatment
- Cases with V.A > 6/12 I/V steroids f/b oral steroids – speed up recovery and lower the incidence of MS in first two years.

No long-term benefit on the final V.A.

WORKUP

→ All patients with O.N – MRI – if normal no further work.

→ MRI show 2 or > 2 typical lesion then I/V steroids f/b oral may incidence of MS in first two years.

ASSOICATION OF MS & OPTIC NEURITIS:

1) 15 – 20% pts with MS will present with O.N.
2) 35 – 40% pts with MS will develop optic neuritis during course of their disease.
3) 74% female and 34% male with optic neuritis will develop MS when followed up to 15 years

4) 50% -70% of clinically isolate optic neuritis have abnormal MRI similar to that seen in MS.
5) Risk of MS is increased in pts of optic neuritis when there is winter onset, HLA DR2 positively and Uhthoff's phenomenon.
6) 36 eyes of 18 pts – when alive only 8 of 18 pts had diagnosis of unilateral or bilateral optic neuritis.

On Autopsy35 eyes out of 36 eyes showed evidence of demyelination.

Thank You