

Neuro-Ocular Grand Rounds

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COMMON OPTIC NEUROPATHIES THAT CAN PRESENT WITH DISC SWELLING

- ◆ ANTERIOR ISCHEMIC OPTIC NEUROPATHY
- ◆ OPTIC NEURITIS
- ◆ PAPILLEDEMA
- ◆ PSEUDOTUMOR CEREBRI
- ◆ PSEUDO-PAPILLEDEMA
- ◆ INFILTRATIVE OPTIC NEUROPATHIES
- ◆ COMPRESSIVE OPTIC NEUROPATHIES
- ◆ TOXIC OPTIC NEUROPATHIES
- ◆ HEREDITARY OPTIC NEUROPATHIES

ANTERIOR ISCHEMIC OPTIC NEUROPATHY (AION)

- ◆ PATIENTS OVER THE AGE OF 40
- ◆ PAINLESS
- ◆ SUDDEN UNILATERAL LOSS OF VISION
- ◆ REDUCED COLOR VISION
- ◆ AFFERENT PUPILLARY DEFECT
- ◆ ALTITUDINAL FIELD LOSS

FUNDUS APPEARANCE OF AION

- ◆ PALE DISC SWELLING
- ◆ OFTEN SECTORIAL (SUPERIOR)
- ◆ PERIPAPILLARY HEMORRHAGES
- ◆ ATTENUATED RETINAL ARTERIOLES
- ◆ DELAYED CHOROIDAL FILLING ON FA
- ◆ DEVELOPMENT OF OPTIC ATROPHY (4-6 WEEKS)

SYSTEMIC ASSOCIATION OF AION

- ◆ ARTERITIC
 - GIANT CELL ARTERITIS(GCA) (6%)
- ◆ NON-ARTERITIC
 - HYPERTENSION (40%)
 - DIABETES (17%)
 - ARTERIOSCLEROSIS (14%)
 - MIGRAINE (2%)
 - IDIOPATHIC (27%)

ARTERITIC AION (GCA)

- ◆ PATIENTS OVER THE AGE OF 70
- ◆ F>M
- ◆ MORE COMMON IN CAUCASIANS
- ◆ OVER 50% WITH 20/200 OR WORSE VA

- ◆ 65% RISK TO FELLOW EYE IF UNTREATED
- ◆ ELEVATED SEDIMENTATION RATE/POSITIVE C REACTIVE PROTEIN
- ◆ POSITIVE TEMPORAL ARTERY BIOPSY

SYSTEMIC SIGNS OF GCA

- ◆ HEADACHES
- ◆ SCALP TENDERNESS
- ◆ SWOLLEN TEMPORAL ARTERIES
- ◆ JAW CLAUDICATION
- ◆ WEIGHT LOSS
- ◆ MUSCLE STIFFNESS

OCULAR SIGNS OF GCA

- ◆ AION
- ◆ AMAUROSIS FUGAX
- ◆ OPHTHALMOPLÉGIA
- ◆ CENTRAL RETINAL ARTERY OCCLUSION

NON-ARTERITIC AION

- ◆ LACK SYSTEMS OF GCA
- ◆ YOUNGER (40-65)
- ◆ NO PREFERENCE TO SEX OR RACE
- ◆ 45% WITH 20/40 OR BETTER VA
- ◆ SMALL DISC - NO CUP
- ◆ NORMAL ESR/C-REACTIVE PROTEIN
- ◆ 12-40% RISK TO FELLOW EYE OVER 3-5 YEARS
- ◆ UP TO 43% OF PTS MAY SHOW A SIGNIFICANT IMPROVEMENT IN VA

MANAGEMENT

- ◆ Differentiate arteritic from non-arteritic AION
- ◆ Evaluate for signs and symptoms of GCA
- ◆ Order ESR and C-reactive protein
- ◆ Evaluate size of the fellow optic nerve

TREATMENT

- ◆ ARTERITIC
HIGH DOSE SYSTEMIC CORTICOSTEROIDS
MANAGED BY A RHEUMATOLOGIST
- ◆ NON-ARTERITIC
NO PROVEN EFFICACY WITH STEROIDS
REFER TO THEIR INTERNIST (HTN, DM, MI)
GREATER RISK OF CVA AND MI

ISCHEMIC OPTIC NEUROPATHY DECOMPRESSION TRIAL

- ◆ 244 PATIENTS WITH NON ARTERITIC AION WITH VA 20/64 OR WORSE
- ◆ RANDOMIZED TO DECOMPRESSION SURGERY VS OBSERVATION

- ◆ AT 6 MONTHS, 33% SURGERY VS 43% OBSERVE IMPROVED 3 LINES VA
24% SURGERY VS 12% OBSERVE HAD DECLINED 3 LINES VA
- ◆ CLINICAL TRIAL SHOWED OPTIC NERVE SHEATH DECOMPRESSION HAS NO BENEFIT IN THE TREATMENT OF NON-ARTERITIC AION AND MAY BE HARMFUL.
OPTIC NEURITIS

OPTIC NEURITIS

- ◆ PATIENTS UNDER THE AGE OF 45
- ◆ FEMALES: MALES RATIO 2:1
- ◆ PAIN ON EYE MOVEMENTS
- ◆ VARIABLE ACUTE VISUAL ACUITY OR FIELD LOSS
- ◆ REDUCED COLOR VISION
- ◆ AFFERENT PUPILLARY DEFECT
- ◆ ANY VF DEFECT POSSIBLE
- ◆ VISION IMPROVES IN 2-8 WEEKS (SOMETIMES LONGER) AFTER INITIAL EVENT
- ◆ DISC PALLOR MAY DEVELOP

DISC APPEARANCE IN OPTIC NEURITIS

- ◆ 40% DISC SWELLING (PAPILLITIS)
- ◆ 50% WITHOUT DISC SWELLING (RETROBULBAR)
- ◆ 10% WITH DISC PALLOR (RECURRENT)

CAUSES OF OPTIC NEURITIS

- ◆ DEMYELINATING DISEASE (MS)
74% FEMALE VS 34% MALE AFTER 15 YEARS
- ◆ IDIOPATHIC
- ◆ COLLAGEN VASCULAR DISEASE
- ◆ SYPHILIS

THE FULL WORK UP OF OPTIC NEURITIS

- ◆ MRI OR CT
- ◆ LP
- ◆ ANA
- ◆ CXR
- ◆ FTA-ABS

TREATMENT OF OPTIC NEURITIS

THE OPTIC NEURITIS TREATMENT TRIAL

- ◆ 2X GREATER INCIDENCE OF RECURRENCE WITH ORAL STEROIDS
- ◆ IV STEROIDS FOLLOWED BY ORAL STEROIDS - FASTER RECOVERY, BUT LITTLE LONG TERM BENEFIT IN VA COMPARED TO PLACEBO
- ◆ PATIENTS WITH UBO'S ON MRI HAVE A GREATER RISK OF MS
- ◆ IV STEROIDS MAY PREVENT OR DELAY THE ONSET OF MS FOR FIRST TWO YEARS

PAPILLEDEMA

- ◆ ANY AGE

- ◆ NORMAL VA/COLOR VISION *
- ◆ NO AFFERENT PUPILLARY DEFECT
- ◆ ENLARGED BLIND SPOT
- ◆ HEADACHES, NAUSEA AND VOMITING
- ◆ FOCAL NEUROLOGICAL SYMPTOMS
- ◆ TRANSIENT OBSCURATIONS OF VISION
- ◆ BILATERAL VI NERVE PALSY

DISC APPEARANCE IN PAPILLEDEMA

- ◆ BILATERAL HYPEREMIC DISC SWELLING
- ◆ PERIPAPILLARY HEMORRHAGES\EXUDATE
- ◆ PATON'S LINES
- ◆ LOSS OF SUPERFICIAL VENOUS PULSE
- ◆ SEVERE OR CHRONIC - MAY LEAD TO PERMANENT DAMAGE

MANAGEMENT OF PAPILLEDEMA

- ◆ CHECK BLOOD PRESSURE
- ◆ CT / MRI
- ◆ LP
- ◆ DISC DOCUMENTATION
- ◆ TREAT UNDERLYING CAUSE - MONITOR VA, CV AND VF

PSEUDOTUMOR CEREBRI

- ◆ YOUNG OBESE FEMALES
- ◆ NORMAL IMAGING STUDIES (CT OR MRI)
- ◆ NORMAL OR SMALL CEREBRAL VENTRICLES
- ◆ INCREASED INTRACRANIAL PRESSURE (LP)
- ◆ NORMAL CSF COMPOSITION (LP)
- ◆ 20-25% DEVELOP VISUAL LOSS OVER COURSE OF THEIR DISEASE

MANAGEMENT OF PSEUDOTUMOR CEREBRI

- ◆ R/O EXOGENOUS AGENTS (VIT A, STEROIDS, ACCUTANE, BIRTH CONTROL)
- ◆ WEIGHT LOSS
- ◆ DIAMOX (1-4 GRAMS/DAY)
- ◆ MONITOR VA, CV, VF AND DISC
- ◆ SHUNT PROCEDURES
- ◆ OPTIC NERVE SHEATH DECOMPRESSION

OPTIC DISC DRUSEN

- ◆ HYALIN BODIES
- ◆ ELEVATED DISC (NO CUPPING)
- ◆ ANOMALOUS DISC VESSELS
- ◆ FAMILIAL
- ◆ MAY DEVELOP VISUAL LOSS
- ◆ NFL DROPOUT

CAUSES OF PSEUDO-PAPILLEDEMA

- ◆ OPTIC NERVE HEAD DRUSEN
- ◆ HIGH HYPEROPIA

- ◆ ANOMALOUS DISCS
- ◆ MEDULLATED NERVE FIBERS
- ◆ PERIPAPILLARY CHOROIDAL NEOVASCULAR MEMBRANE (CNVM)

MANAGEMENT OF AN ANOMALOUS DISC

- ◆ PATIENT HISTORY
- ◆ MONITOR VA, CV, VF
- ◆ PHOTO DOCUMENTATION
- ◆ ULTRASONOGRAPHY
- ◆ FLUORESCIN ANGIOGRAPHY
- ◆ CT / MRI

INFILTRATIVE OPTIC NEUROPATHY

- ◆ ANY AGE
- ◆ PROGRESSIVE VA LOSS
- ◆ REDUCED COLOR VISION
- ◆ VARIOUS VISUAL FIELD DEFECTS
- ◆ WITH OR WITHOUT DISC SWELLING
- ◆ VITREOUS CELLS
- ◆ SYSTEMIC ILLNESS

CAUSES OF INFILTRATIVE OPTIC NEUROPATHY

- ◆ LEUKEMIA
- ◆ LYMPHOMA
- ◆ SARCOID
- ◆ METASTASIS

MANAGEMENT OF INFILTRATIVE OPTIC NEUROPATHY

- ◆ SYSTEMIC WORK-UP
- ◆ LOCAL RADIATION
- ◆ CHEMOTHERAPY

COMPRESSIVE OPTIC NEUROPATHY

- ◆ WITH OR W/O DISC SWELLING
- ◆ PROGRESSIVE VA LOSS
- ◆ LOSS OF COLOR VISION
- ◆ AFFERENT PUPILLARY DEFECT
- ◆ OPTOCILIARY SHUNT VESSELS
- ◆ PROPTOSIS
- ◆ EVENTUAL DISC PALLOR

CAUSES OF COMPRESSIVE OPTIC NEUROPATHY

- ◆ ORBITAL TUMORS
- ◆ DYSTHYROID OPTIC NEUROPATHY
- ◆ OPTIC NERVE GLIOMA
- ◆ OPTIC NERVE SHEATH MENINGIOMA
- ◆ PITUITARY TUMORS
- ◆ CRANIOPHARYNGIOMAS

MANAGEMENT OF COMPRESSIVE OPTIC NEUROPATHY

- ◆ CT/MRI
- ◆ THYROID FUNCTION TESTS

TOXIC OPTIC NEUROPATHY

- ◆ PAINLESS PROGRESSIVE VA LOSS
- ◆ BILATERAL
- ◆ REDUCED COLOR VISION
- ◆ CECOCENTRAL SCOTOMAS
- ◆ ACUTE DISC HYPEREMIA
- ◆ DISC PALLOR (TEMPORAL)

CAUSES OF TOXIC OPTIC NEUROPATHY

- ◆ ALCOHOL-NUTRITIONAL
- ◆ EXOGENOUS AGENTS

MANAGEMENT OF TOXIC OPTIC NEUROPATHY

- ◆ HISTORY
- ◆ RBC FOLATE
- ◆ SERUM B12
- ◆ AA GROUP
- ◆ DIETITIAN

OTHER CAUSES OF DISC SWELLING

- ◆ HYPOTONY
- ◆ VENOUS OCCLUSIVE DISEASE
- ◆ DIABETIC PAPILLOPATHY
- ◆ HYPERTENSIVE CRISIS