Calgary Vision Event 2015 – Dr. Curtis R. Baxstrom

Vision Therapy with a Vestibular Twist

Saturday, 1445-1645

1. Overview of Vision and Vestibular Processing
2. Vestibular anatomy and physiology
    a. Central and Peripheral Processing
    b. Semi-circular canals-rotational stimulation, arousal
        i. Effects upon pairs of EOM
    c. Otoliths-linear stimulation, calming
        i. Effects upon all EOM
    d. Combined
3. Vestibular development
    a. Development of VOR gain and motion processing
4. Specific functions of vestibular processing-Herdman
5. Evaluation of vestibular processing
    a. Case history
    b. Observations
    c. Dynamic visual acuity
    d. Disequilibrium Evaluation Form
    e. Visual examination
6. Vestibular Dysfunction
    a. Disequilibrium/Dizziness
    b. Inner concussion syndrome
    c. Benign paroxysmal positional vertigo(bppv)
    d. Others
7. Management of Vestibular Dysfunction
    a. Spontaneous recovery
    b. Vestibular adaptation
    c. Substitution
    d. Habituation
    e. Medication and surgery
    f. Optical considerations
8. Vestibular treatment considerations in vision therapy
    a. Position of patient
    b. Support of patient, foundational surfaces
    c. Adjunct tools
    d. Visual input-eyes open or closed, lenses, prism, occlusion
    e. Linear stimulation
    f. Rotational stimulation
    g. Variables-head position, speed, range, fixations, repetition
    h. KEY-therapeutic value
9. Vision therapy applications

a. Can you separate visual and vestibular processing?
b. Arousal, attention and modulation
    i. Processing speed
c. Eye movements
    i. EOM control-DEM
    ii. Range of movement for paresis
    iii. Gaze palsy
d. Binocular vision
    i. Suppression, Phorias, Ductions
    ii. Strabismus
    iii. Convergence spasm
e. Unilateral Spatial Inattention
f. Nystagmus

10. Summary Overview

Looking at the Ends of the Strabismus Spectrum-Infantile Esotropia and Paresis/Palsy of EOM

Sunday, 10:30-12:30

1. Overview
2. Strabismus-overview
    a. Accommodative
    b. Non-Accommodative
    c. Others
        i. Infantile esotropia
        ii. Strabismus from paresis/palsy of EOM
3. Infantile Esotropia
    a. Origins of infantile esotropia
    b. Review of the literature
    c. Evaluation of infantile esotropia
        i. Abduction deficit
        ii. Motion processing asymmetry
    d. Traditional medical treatment
        i. Surgical treatment
            1. Benefits and side effects of early surgery
        ii. Nonsurgical treatment
            1. Monocular patching
            2. Prism
            3. Sector occlusion
    e. Developmental Aspects
        i. Spontaneous recovery
        ii. Why 3-4 months of age are critical for early diagnosis
        iii. Addressing causes vs. symptoms
            1. Abduction deficit and cross fixation pattern

f. Optometric approach
    i. Binasal occlusion
        1. Disrupt cross fixation pattern
        2. Promote abduction
        3. Abducting eye should lead localization
        4. Promote motion processing
        5. Motor and sensory dysfunction
    ii. Abduction therapy
        1. Pursuits
        2. Saccades
        3. OKN/Motion processing
        4. VOR
        5. Overview of Ron, et.al. studies on EOM
        6. Vergence therapy with release
        7. Cranial Osteopathy and Petrosphenoidal ligament(Gruber)
    iii. Case Examples
    iv. Summary overview

4. Beyond Diagnosis-The Rehabilitation of Ocular Motor Paresis/Palsy
    a. Introduction
    b. Causes
    c. Effects of treatment or no treatment
        i. Atrophy
        ii. Contracture
        iii. Muscle loss
    d. Testing
        i. Monocular ROM
        ii. CT all 9 gazes
        iii. Parks 3 Step
        iv. Hess-Lancaster testing
        v. Spreading of commitance
    e. Special considerations for patient
        i. Patient needs
            1. Safety during mobility and ADL's
            2. Recovery of function
        ii. Patient vs. Rehab team vs. OD goals
        iii. Rehabilitation vs. Compensatory vs. Combined approaches
    f. Medical treatment
        i. Unilateral patching-for diplopia management
        ii. Wait and see
        iii. Surgery
    g. Optometric considerations for treatment
        i. Selective vs. Full occlusion
        ii. Guidance and rehabilitation
            1. Extend monocular ROM
            2. Extend binocular ROM
        iii. Compensatory prism

    iv. Combining approaches
h. Case Presentations
i. Summary Overview
    i. Start as early as possible
    ii. Improve ROM, control diplopia with selective occlusion and/or prism
    iii. Remove prism overtime
    iv. Surgical considerations