Animation in the Diagnosis and Management of Glaucoma

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I. Current tools for identifying glaucoma and glaucomatous progression
   a. Structure
      i. Photos
      ii. HRT
      iii. OCT
      iv. GDx
   b. Function
      i. Visual Fields

II. Weaknesses in Structural Analysis
   a. Limited sensitivity and specificity of HRT, OCT, GDx
   b. The many limitations of photographic side by side analysis
      i. Inter and Intra-observer disagreement
      ii. Time consuming
      iii. Cumbersome

III. Animation flicker-type utilization in other fields
   a. Astronomy
   b. Weather forecasting
   c. National security

IV. Animation of optic nerve/nerve fiber layer structure
   a. HRT
      i. Baseline to most recent analysis
      ii. Analysis of every scan
   b. Matched Flicker
      i. A technique called flicker comparison involves taking 2 images obtained at different times and projecting them one atop the other. In the flickered images, unchanged areas appear stable, whereas changes in the optic nerve appear as movement. This concept is similar to the process of animation in that slight differences in sequential pictures give the illusion of movement when alternated or “flickered” at a certain rate.
      ii. Numerous studies supporting
      iii. Incorporation into clinical practice

V. Billing and Coding
   a. 92250
   b. 0308T
      i. Computer-aided animation and analysis of time series retinal images for the monitoring of disease progression, unilateral or bilateral, with interpretation and report
      ii. Effective January 1, 2015
iii. Category 3

VI. Case Presentations

a. 52 Y/O WM, Presents with night vision complaints, Father had cataracts, SHx: seasonal affective disorder, Meds: Effexor prn, Ta 25, 28, 28mmHg OD, 21, 19, 20 mmHg OS

b. 67 Y/O WF, Started to follow as a glaucoma suspect in 2001 based on optic nerve appearance, IOP OD Range 19-22, OS 15-20, Pach’s 624 OD, 661 OS, HRT’s from 2001 to 2008 stable between 15-18mmHg

c. 69 Y/O WF, Followed since 2002 as a glaucoma suspect b/o large cupping, IOP OD range 11-18, OS range 12-20, Ochx: macular hole spring 2005 with repair, cataract surgery fall 2005, Pach’s 553 OD, 554 OS

d. 56YO/WF, daughter forced her to come, Pt doesn’t like eye doctors, hates VF’s, has glaucoma x 6 years, WAS on timoptic bid OU for “many years”, Had “that laser”, was on “pressure pills” (diamox) for 1 yr, Has not taken meds in over a year, Has Amblyopia OS Refraction -0.75-0.75x125 20/20 OD, +3.00-1.00x55 20/70 OS, 15 diopter L const XT Peripheral Pl, Ta 32mmHg OU at 11AM, DFE

VII. References


