CASE 2: GLAUCOMA

Mr. Jones is a 62 year-old Caucasian male. He presents for an eye examination to find out how his right eye is doing. He was diagnosed with glaucoma in his left eye 5 years ago, and has no history of trauma to that eye. He has a history of noncompliance when using medications. He does not have hypertension and he is not diabetic. He is not taking any oral medications. Nobody in his family has had glaucoma.

His visual acuity is normal in both eyes.

Gonioscopy of the angles reveals that in the right eye the trabecular meshwork is visible. Pigmentation/iris processes appear normal. The scleral spur is seen in only some directions of gaze. The are no peripheral anterior synechiae. The left eye looks similar.

Intraocular pressures (IOP) are 22 mm right, 32 mm left at 3.30 pm.

The optic discs: cup disc ratios (c/d) are 0.25 right and 0.95 left.

Two weeks later IOPs are 22 and 28.

Questions
What type of glaucoma does this patient have? What is the mechanism?
What sort of visual field defects would you expect in the left eye and why? What about the right eye?
Why is the visual acuity normal in both eyes? Does this mean the patient can see well out of both eyes?
From what you learn about the normal anatomy and physiology and from the pathophysiology of glaucoma can you think of a way to approach treatment? (Don't think of specific drugs or surgical procedures - imagine that none have been developed yet).
Which would be the best specific plan of attack for this particular patient considering currently available drugs and surgeries?

Essential Objectives
Anatomy and physiology of
- the limbus, including the angle
- the iris and ciliary body
- aqueous production and drainage
- anterior and posterior chambers
- the optic nerve (there will be much more on the posterior eye in the next case)

References
Your books, other books in the library (in particular check out books on reserve), journal articles, and internet websites. Examples (in no particular order) include:

1. Forrester: The Eye.
3. Fingeret, Lewis: Primary Care of the Glaucomas
4. Shields: Textbook of Glaucoma
10. Zimmerman, Kooner: Clinical Pathways in Glaucoma
11. Litwak: Glaucoma Handbook