

# UNUSUAL VISUAL FIELD DEFECT IN GLAUCOMA: A CASE REPORT

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## Background

To our knowledge visual field defects show up when the visual pathway is affected and this can occur at various site. It can be derived also from ocular pathology and be due to pathology at the optic nerve head like glaucoma, "nerve head drusen" or at the retina like vein occlusion and retinal detachment.

As a general rule ocular causes tend to respect the horizontal midline while intracranial causes tend to respect the vertical midline.

Binasal hemianopic visual field defects are very rare in clinical practice. The neurological causes described known to be linked to this type of visual defect are: displacement of terminal parts of both optic nerves against the internal carotid arteries in internal hydrocephalus, bilateral atherosclerosis or aneurysm of the supraclinoid portion of ICA, unilateral aneurysm pushing the chiasm against the opposite artery, olfactory groove meningioma, empty sella syndrome, intracranial hypotension, neurosyphilis which affected both eyes.

## Methods

- 73 year-old woman with a medical history of PAF in OAT, occasional episode of dizziness due to cervical arthrosis and fainting fit, complained about visual disorder developed after a fainting event
- Ocular Hypertension in OO (22 mmhg)
- Flame retinal hemorrhages in OS at the Fundoscopic examinations
- Bilateral superior-nasal quadrantanopia at the CV (Figure 1)
- CT scan, MRI with gadolinium, MRI angiography were normal
- Full blood count, vitamin B12, folate and r-TSH level, serum treponemal antigen (TPPA) and venereal diseases research laboratory (VDRL) titre were within normal limite
- VEP showed abnormalities in the waveform of P100 in OO associated with increase latency in OS. During a second evaluation an increase latency at 15' was observed in OD and at 15' and 30' in OS
- OCT showed reduction in RNFL (retinal nerve fiber layer) in infero-temporal sector in OD and in infero-temporal, infero-nasal and supero-temporal sectors in OS and a light increase of macular thickness OO (Figure 2).

## Results

- A diagnosis of bilateral superior-nasal quadrantanopia due to glaucoma was formulated
- The patient started an ocular hypotensive therapy in order to prevent further visual defects
- The patient presented no progression of the visual disorder on follow up

## Conclusions

- We describe a woman with bilateral superior-nasal quadrantanopia who underwent various type of neuroimaging and blood sample in order to exclude compressive lesions, ischemia or tabe dorsalis. The abnormalities found at the evaluation of F.O., at OCT and at VEP were all explained by a damage involving bilateral optic nerves due to glaucoma.
- Basic patterns of glaucoma visual field defects described in literature are divided into four major ones:
  - Isolated scotoma
  - Arcuate scotoma
  - Nasal step
  - A generalized depression
- In literature are described only two similar cases of asymptomatic women of different ages with occasional founding of binasal visual field defects and non significant neurological and ophthalmological exams, comprehensive of F.O. evaluation and OCT. The authors proposed a congenital temporal retinal axon missing syndrome as a potential cause of the visual deficit.
- No other cases of binasal quadrantanopia due to glaucoma are described in literature.
- Glaucoma must be considered among the other diagnosis in case of visual field abnormalities.

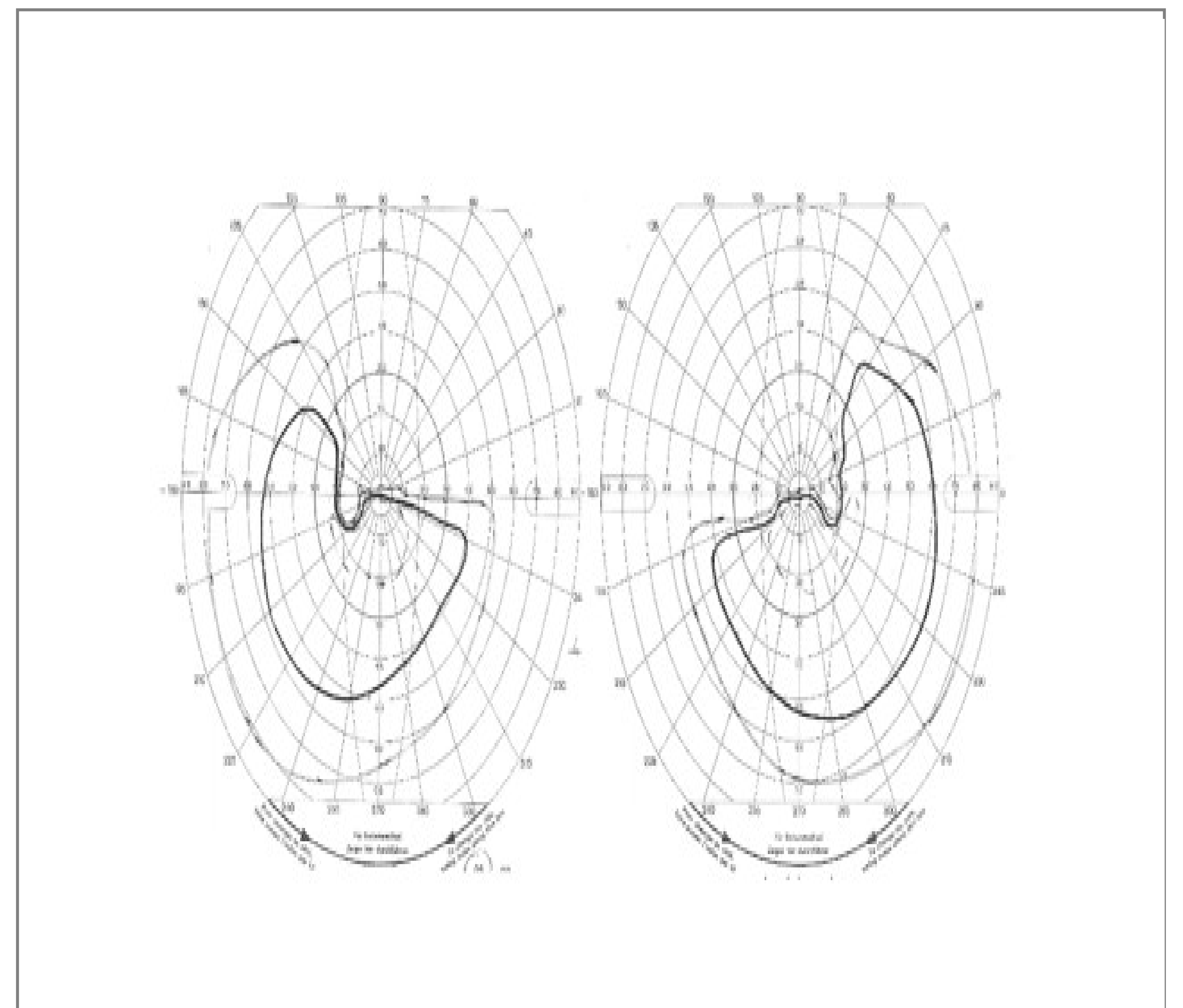


Figure 1: Patient's CV showing the presence of bilateral superior-nasal quadrantanopia

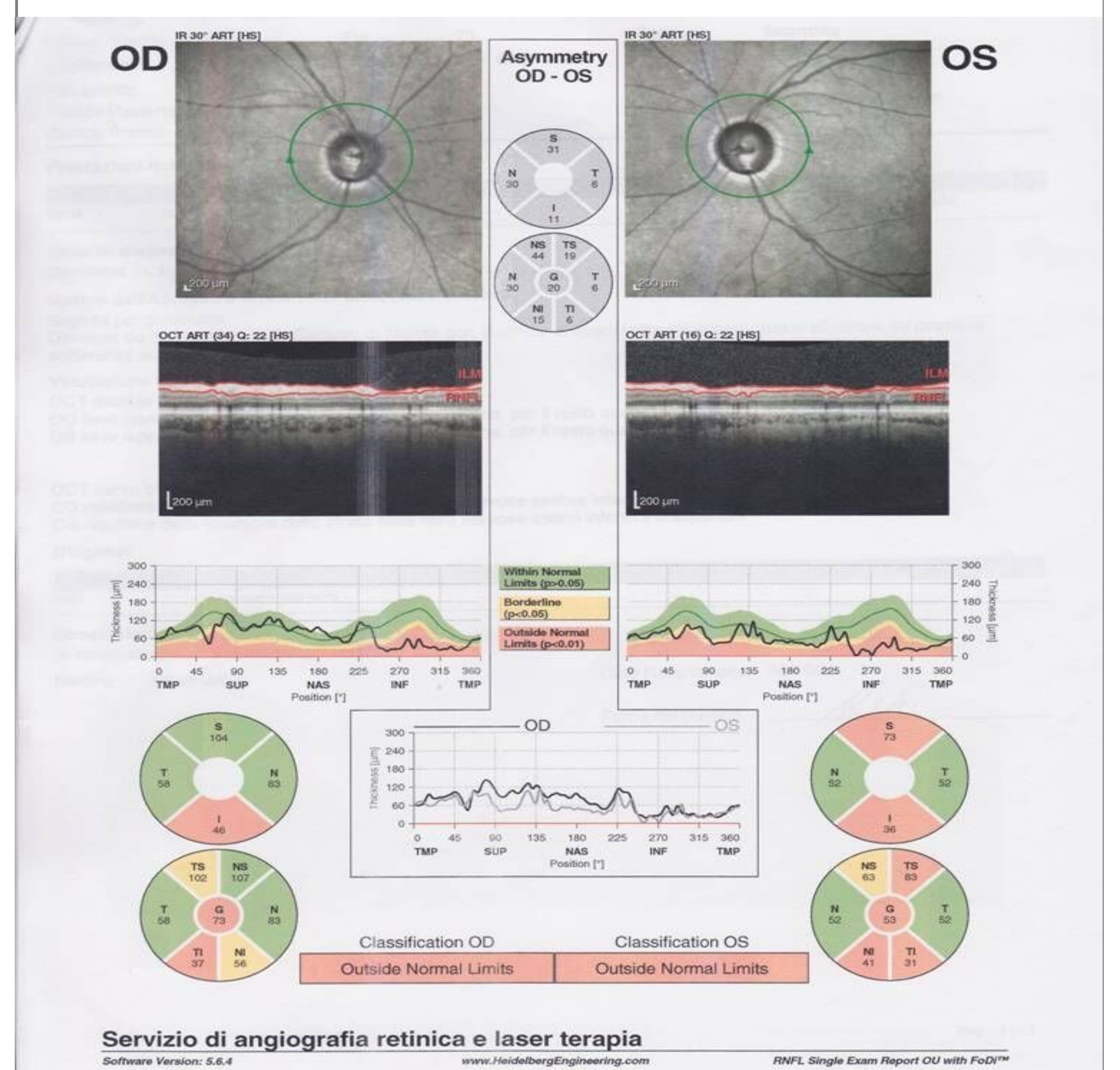


Figure 2: Patient's OCT showing reduction in RNFL (retinal nerve fiber layer) in infero-temporal sector in OD and in infero-temporal, infero-nasal and supero-temporal sectors in OS and a light increase of macular thickness OO

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