

# Case Report: Superior homonymous quadrantanopia in a patient with an infective endocarditis

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An infective endocarditis, specifically bacterial endocarditis, is usually caused by bacteria carried in the blood that may originate from an infection in other parts of the body besides the heart.<sup>1</sup> Injuries, surgeries or preexisting heart conditions make the body vulnerable to infections. Emboli may arise during this type of infection that may lead to visual field defects.

## Case Report

A 62-year-old white male from New York presented with the primary complaint of a recent loss of his left peripheral vision in his left eye and moving white and red flashes in both eyes. The patient had a history of floaters which have subsided in the past years. In addition, the patient reported an acute loss of hearing. The patient denies any head trauma, slurred speech or paralysis in the limbs. Medical history revealed hypercholesterolemia and hypertension, for which he takes vytorin and lotrel, respectively.

The patient's best-corrected visual acuities were 20/20 in the right eye (OD) and in the left eye (OS). Pupil and extraocular motility testings were normal. Slit lamp evaluation revealed trace arcus and cortical cataracts in both eyes (OU). Intraocular pressures were within normal ranges in OU. The dilation fundus examination revealed posterior vitreal detachments in OU and a flat, choroidal nevus in the OD. The posterior pole (*see* Figures 1) and peripheral retina were flat and intact in OU. An automated threshold visual field revealed left superior homonymous quadrantanopia that respected the vertical line but not the horizontal line (*see* Figures 2). Given that the patient experienced the visual disturbances in OU, it was speculated that there was an impending cerebrovascular accident (CVA).

The patient was sent to the emergency room (ER) immediately for a magnetic resonance imaging (MRI), which showed no signs of any infarctions in the brain. An angiogram was then utilized and revealed plaques in the aortic valve. The patient was prescribed coumadin and within one week (July 2011), he developed a fever secondary to a *staphylococcus aureus* infection and was quickly given intravenous antibiotics. The patient's aortic deteriorated valve was later replaced.

The patient returned three months later to get a new pair of spectacles and is scheduled to repeat the visual field test to monitor the status of the quadrantanopia.

## Discussion

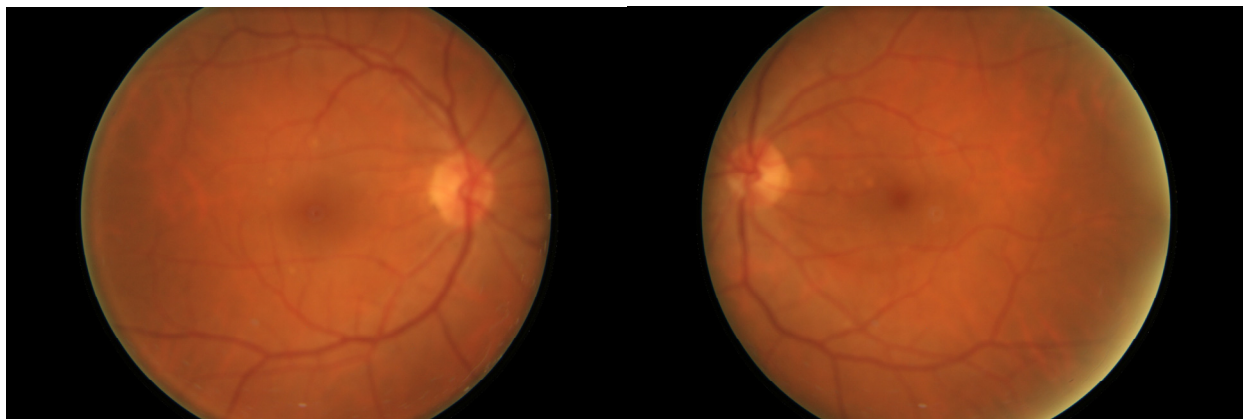
The chief complaint of this case report prompts a thorough DFE and it is reasonable to perform a visual field test, which revealed a left superior homonymous quadrantanopia indicating a possible lesion in the Fleschig-Meyer's loop or elsewhere within the temporal lobe.<sup>2</sup> This suspected lesion may explain the recent hearing loss. In this case, an infective endocarditis was diagnosed which required intravenous antibiotics and a replacement of the aortic valve.

## Conclusion

An infective endocarditis leading to a left superior homonymous quadrantanopia not only can be visually debilitating, but may also reveal an underlying systemic condition that needs to be addressed promptly. A thorough case history and ocular examination are helpful to guide the eyecare practitioner to send the patient to the ER urgently to determine the cause.

## References

1. Robbins SL, Cotran RS, Kumar V, Collins T. *Pathologic Basis of Disease*. 6th ed. Philadelphia: W.B. Saunders Company; 1999: 287.
2. Spalton DJ, Hitchings RA, Hunter PA. *Atlas of Clinical Ophthalmology*. 3rd ed. Spain: Elsevier Mosby; 2005: 665.



**Figure 1**

# Figure 2

## SINGLE FIELD ANALYSIS

EYE: RIGHT

NAME:

ID:

DOB:

CENTRAL 30-2 THRESHOLD TEST

FIXATION MONITOR: GAZE/BLINDSPOT

STIMULUS: III, WHITE

PUPIL DIAMETER:

DATE: 07-06-2011

FIXATION TARGET: CENTRAL

BACKGROUND: 31.5 ASB

VISUAL ACUITY:

TIME: 2:37 PM

FIXATION LOSSES: 1/17

STRATEGY: SITA-STANDARD

RX: +4.25 DS -0.75 DC X 90

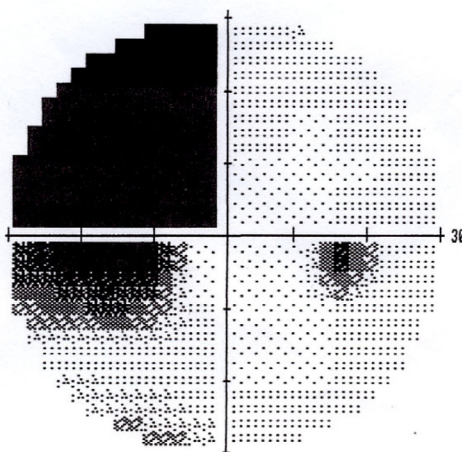
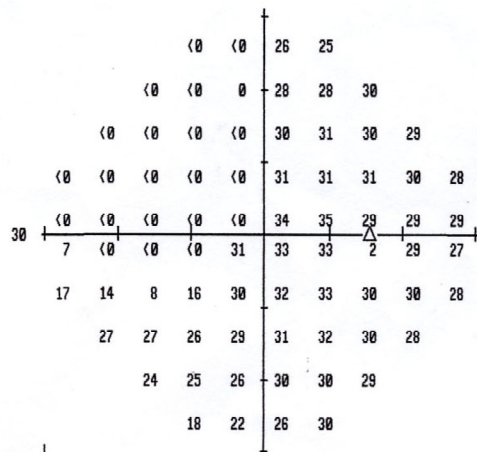
AGE: 62

FALSE POS ERRORS: 1 %

FALSE NEG ERRORS: 0 %

TEST DURATION: 07:28

FOVEA: OFF



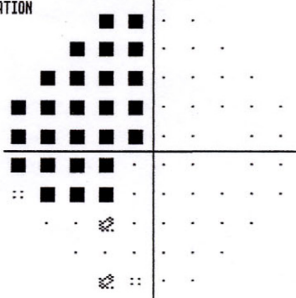
|     |     |    |   |
|-----|-----|----|---|
| -26 | -26 | 3  | 2 |
| -28 | -29 | 1  | 2 |
| -29 | -30 | 1  | 3 |
| -28 | -30 | 0  | 1 |
| -28 | -31 | 2  | 4 |
| -20 | -31 | 0  | 2 |
| -8  | -15 | 0  | 2 |
| 0   | -2  | 0  | 1 |
| -4  | -4  | 0  | 1 |
| -9  | -6  | -2 | 2 |

|     |     |    |    |
|-----|-----|----|----|
| -27 | -27 | 1  | 0  |
| -30 | -30 | -1 | 0  |
| -30 | -32 | -1 | 1  |
| -29 | -32 | -1 | -1 |
| -30 | -33 | 1  | 2  |
| -21 | -33 | -1 | 0  |
| -10 | -16 | -2 | 0  |
| -2  | -3  | -2 | 0  |
| -5  | -5  | -1 | -1 |
| -11 | -7  | -3 | 0  |

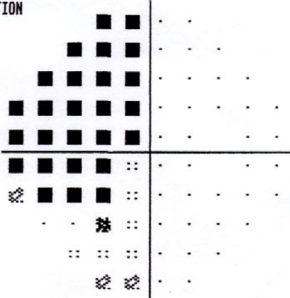
GHT  
OUTSIDE NORMAL LIMITS

MD -11.19 DB P < 0.5%  
PSD 17.30 DB P < 0.5%

TOTAL  
DEVIATION



PATTERN  
DEVIATION



.. < 5%  
⊗ < 2%  
✱ < 1%  
■ < 0.5%

### SINGLE FIELD ANALYSIS

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DOB :

NAME : \_\_\_\_\_

ID:

DOB :

CENTRAL 30-2 THRESHOLD TEST

FIXATION MONITOR: GAZE/BLINDSPOT

STIMULUS: III, WHITE

PUPIL DIAMETER:

DATE: 07-06-2011

FIXATION TARGET: CENTRAL

BACKGROUND: 31.5 ASB

**VISUAL ACUITY:**

TIME: 2:46 PM

FIXATION LOSSES: 0/18

STRATEGY: SITA-STANDARD

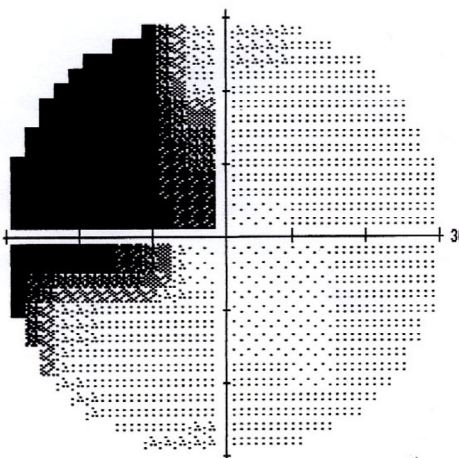
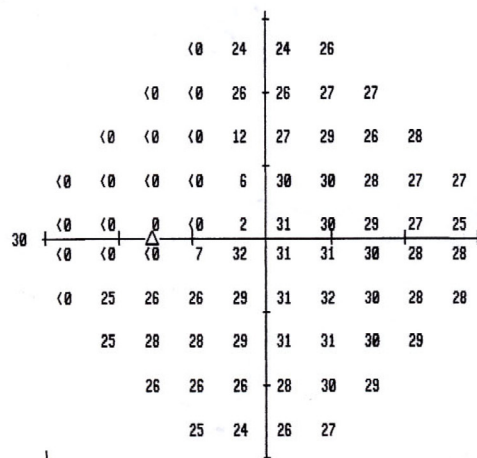
RX: +4.25 DS -0.25 DC X 90

AGE: 62

FALSE NEG ERRORS: 15 %

TEST DURATION: 07:18

FOVER: OFF

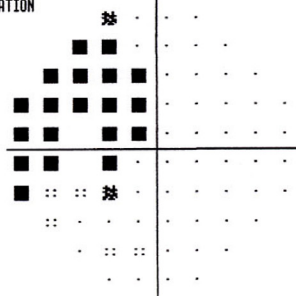


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|-----|-----|-----|-----|-----|----------------|
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|     | -27 | -28 | -1  | -1  | 0 1            |
|     | -29 | -30 | -30 | -17 | -3 -1 -2 1     |
| -29 | -30 | -31 | -32 | -25 | -1 -1 -2 -2 1  |
| -30 | -31 |     | -33 | -29 | -1 -1 -2 -2 -1 |
| -31 | -32 |     | -24 | -1  | -2 -1 -2 -1 1  |
| -31 | -5  | -4  | -5  | -2  | 0 1 0 0 2      |
| -4  | -2  | -2  | -2  |     | 0 1 1 1        |
|     | -3  | -3  | -4  |     | -1 2 2         |
|     |     | -3  | -4  |     | -1 1           |

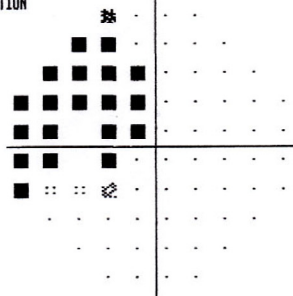
|     |     |     |     |     |    |    |    |    |    |
|-----|-----|-----|-----|-----|----|----|----|----|----|
|     | -25 | 0   | 0   | 2   |    |    |    |    |    |
|     | -27 | -28 | 0   | -1  | 0  | 1  |    |    |    |
|     | -29 | -30 | -30 | -17 | -3 | 0  | -2 | 1  |    |
| -29 | -30 | -31 | -32 | -24 | -1 | -1 | -2 | -1 | 1  |
| -30 | -31 |     | -33 | -29 | -1 | -1 | -2 | -2 | -1 |
| -31 | -32 |     | -24 | -1  | -2 | -1 | -2 | -1 | 1  |
| -31 | -4  | -4  | -5  | -2  | 0  | 1  | 0  | 0  | 2  |
| -4  | -2  | -2  | -2  |     | 0  | 1  | 1  | 2  |    |
|     | -3  | -3  | -3  |     | -1 | 2  | 2  |    |    |
|     |     | -3  | -4  |     | -1 | 1  |    |    |    |

OUTSIDE NORMAL LIMITS

|     |          |          |
|-----|----------|----------|
| MD  | -7.79 DB | P < 0.5% |
| PSD | 14.11 DB | P < 0.5% |

TOTAL  
DEVIATION

PATTERN  
DEVIATION



:: < 5%  
 〰 < 2%  
 〰 < 1%  
 ■ < 0.5%

