

# Comparative analysis of peripheral retinal lesion detection utilizing standard and automontage ultrawidefield imaging

**Sashwanthi Mohan**

**DNB, FICO, MRCS (Ed)**

**Specialist Ophthalmologist, Medcare Eye Centre, Al Safa, Dubai**

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# Background

- Standard ultrawidefield imaging allows to capture 200° of the retina.
- With gaze steering in all directions which leads to production of auto-montage images, up to 97% or 220° of the retina can be imaged with the multi-capture functionality.



# Aim

- To compare standard and automontage ultrawidefield images on Optos in imaging peripheral retinal lesions.



# Materials and Methods

- Retrospective analysis of 32 patients
- Images obtained from 32 patients who had one or more peripheral retinal lesions in at least one eye confirmed by indirect ophthalmoscopy and scleral depression by a single trained retina specialist.
- Both standard ultrawidefield (UWF) and automontage images were included in the analysis.
- The number and location of peripheral retinal lesions detected by each imaging method were recorded and compared.



# Results

- Forty-two eyes of 32 patients were diagnosed with peripheral retinal lesions confirmed by indirect ophthalmoscope examination with scleral depression by a trained retinal specialist.

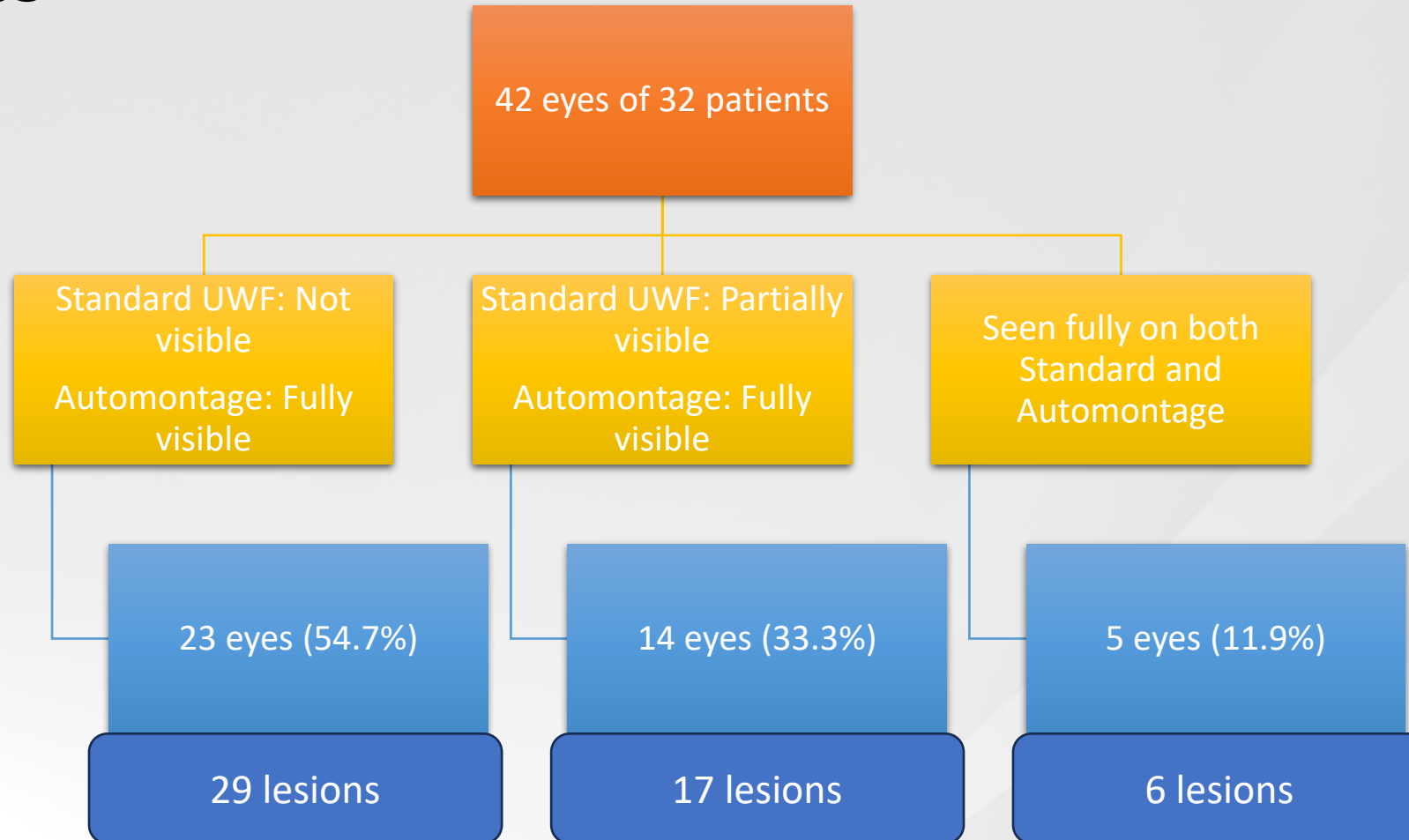


# Types of Lesions

TYPE OF LESION	NUMBER OF EYES (%)
Lattice Degeneration	16 (38.09)
Paving stone degeneration	4 (9.5)
Retinal holes	16 (38.09)
Retinal breaks/horseshoe tears	5 (11.9)
Miscellaneous peripheral lesions	4 (9.5)

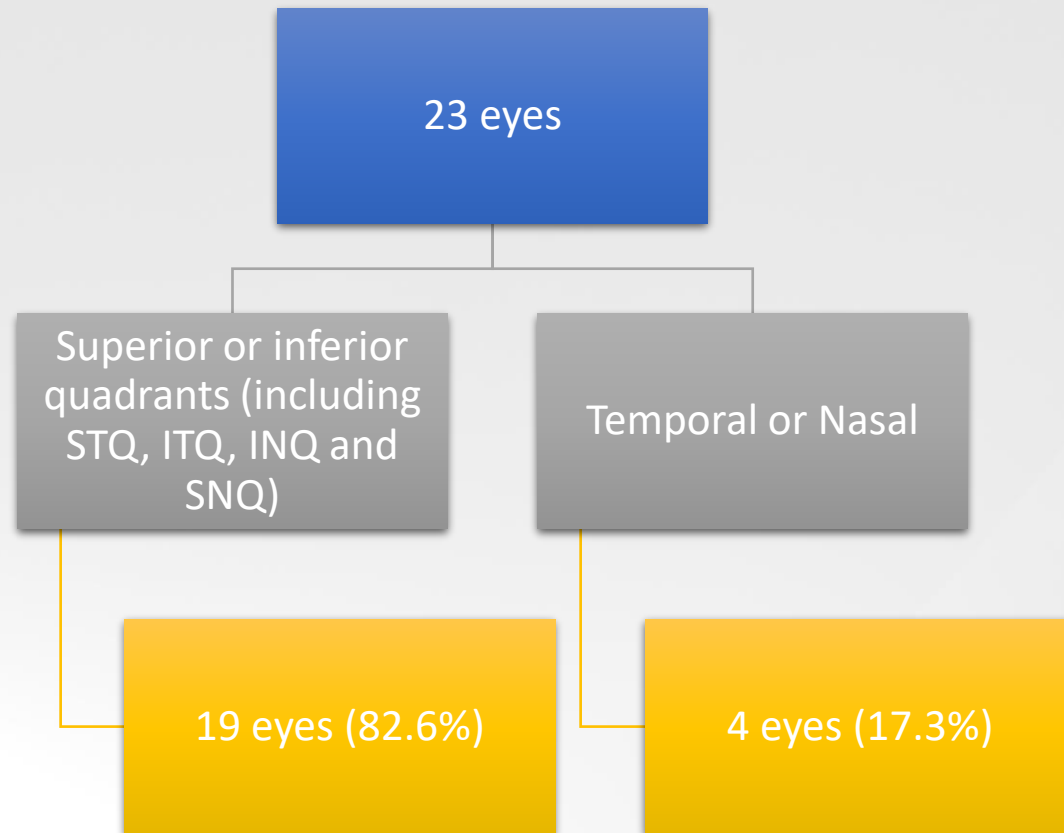


# Results



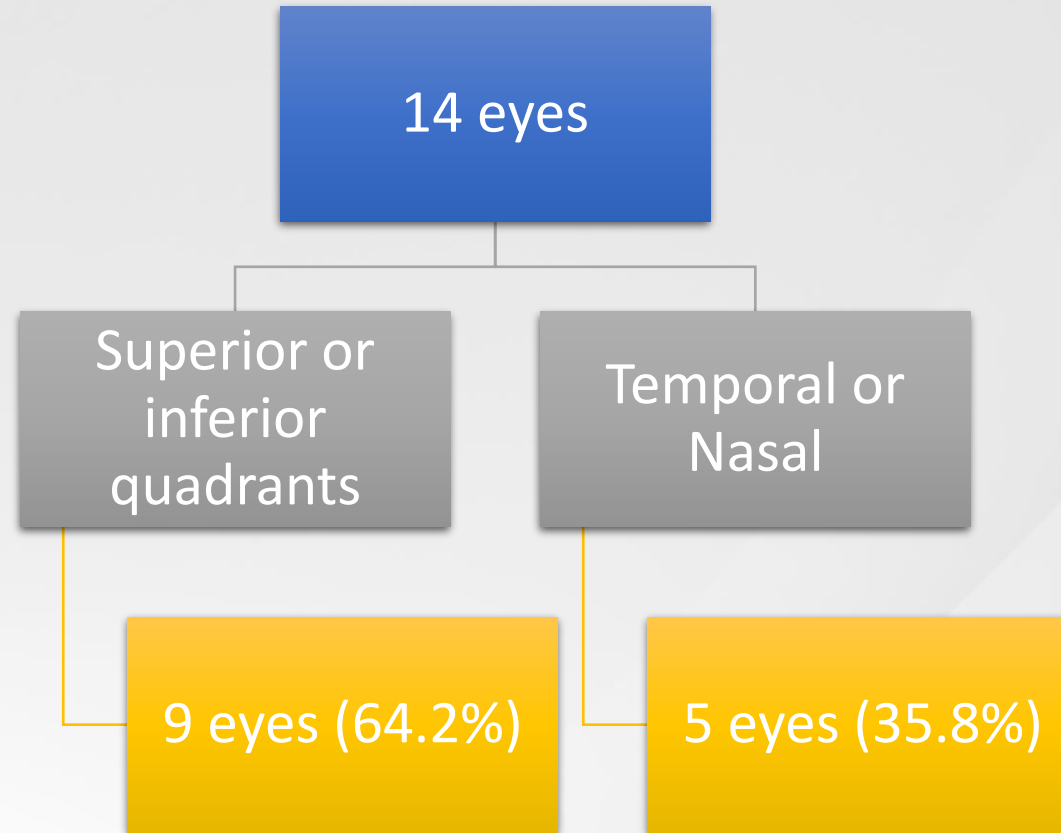


# Only seen on Automontage Imaging



Lesions in superior and inferior quadrants needs gaze steering for capturing of lesions

# Partially seen on Standard Imaging

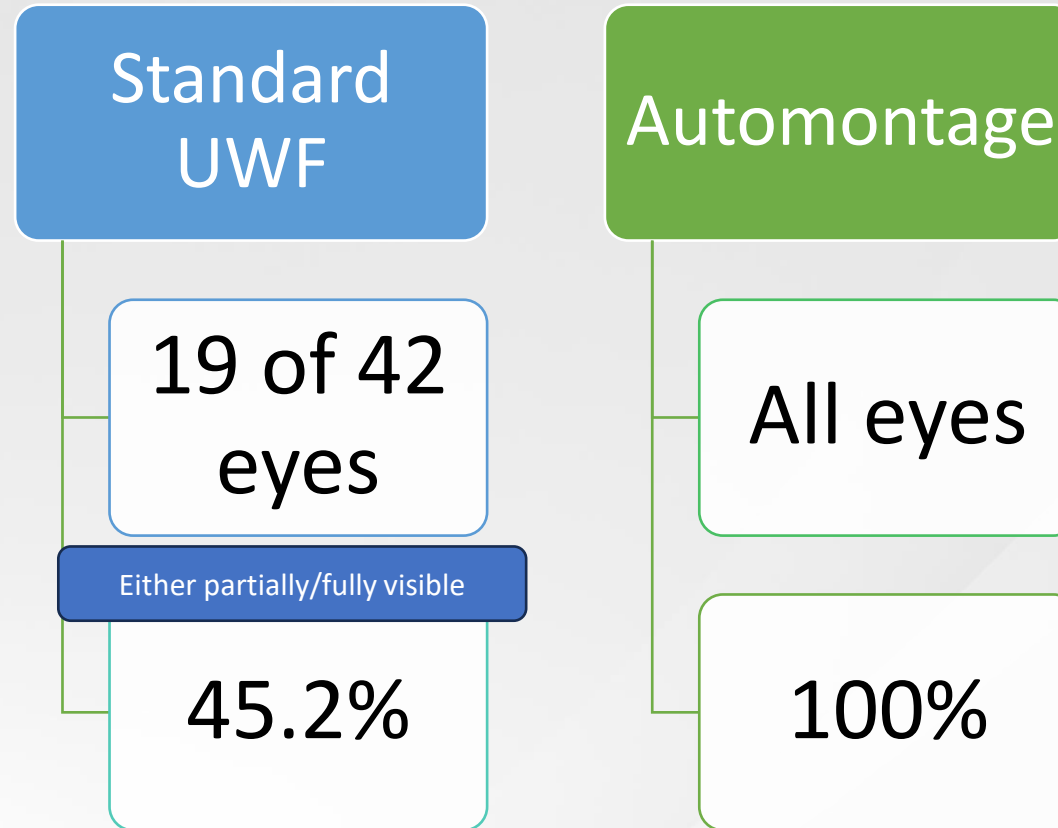


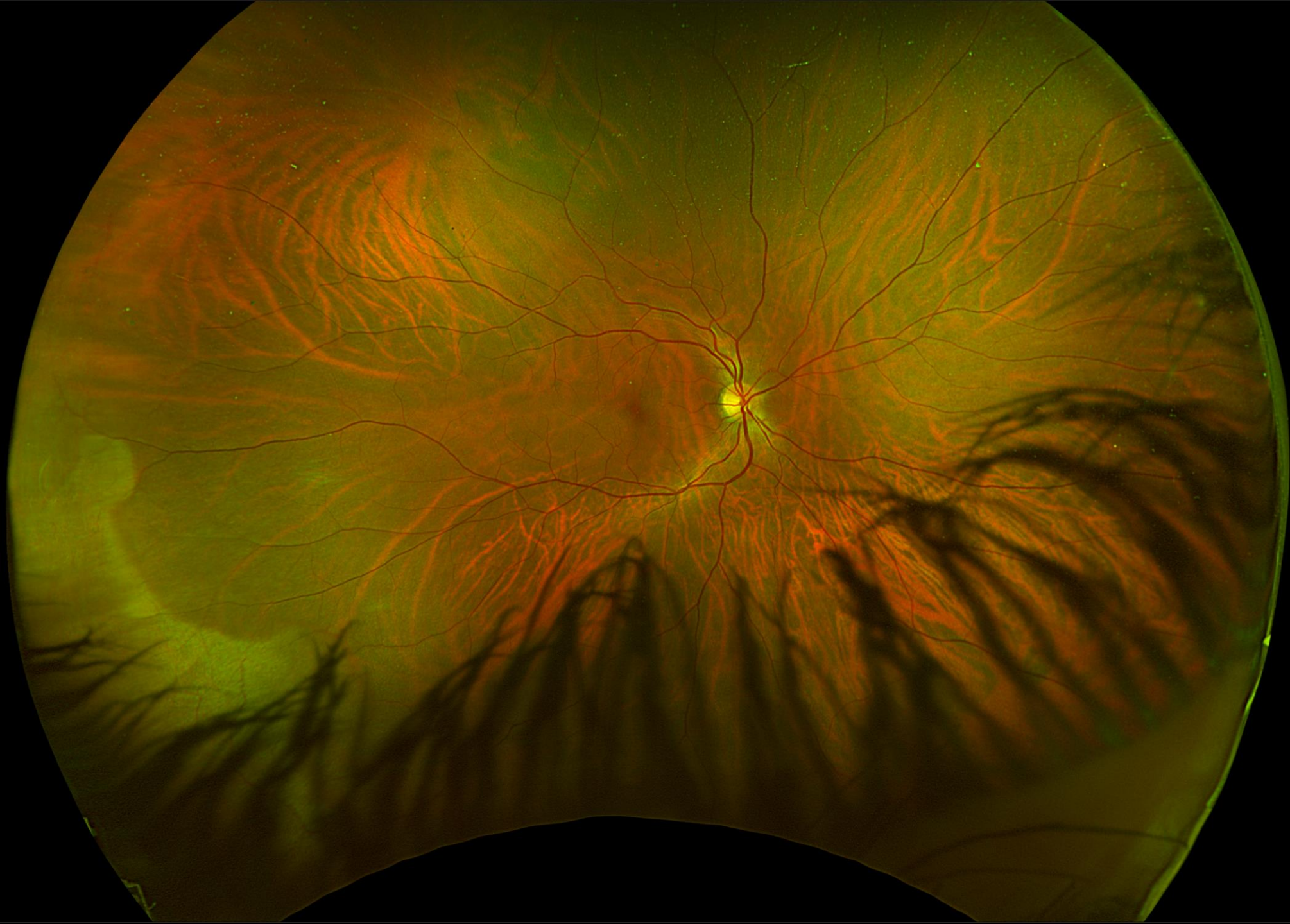
# Lesions seen on both

- In the 5 eyes, where both standard and automontage imaging picked up the lesions, the lesions were located in either temporal or nasal retina.

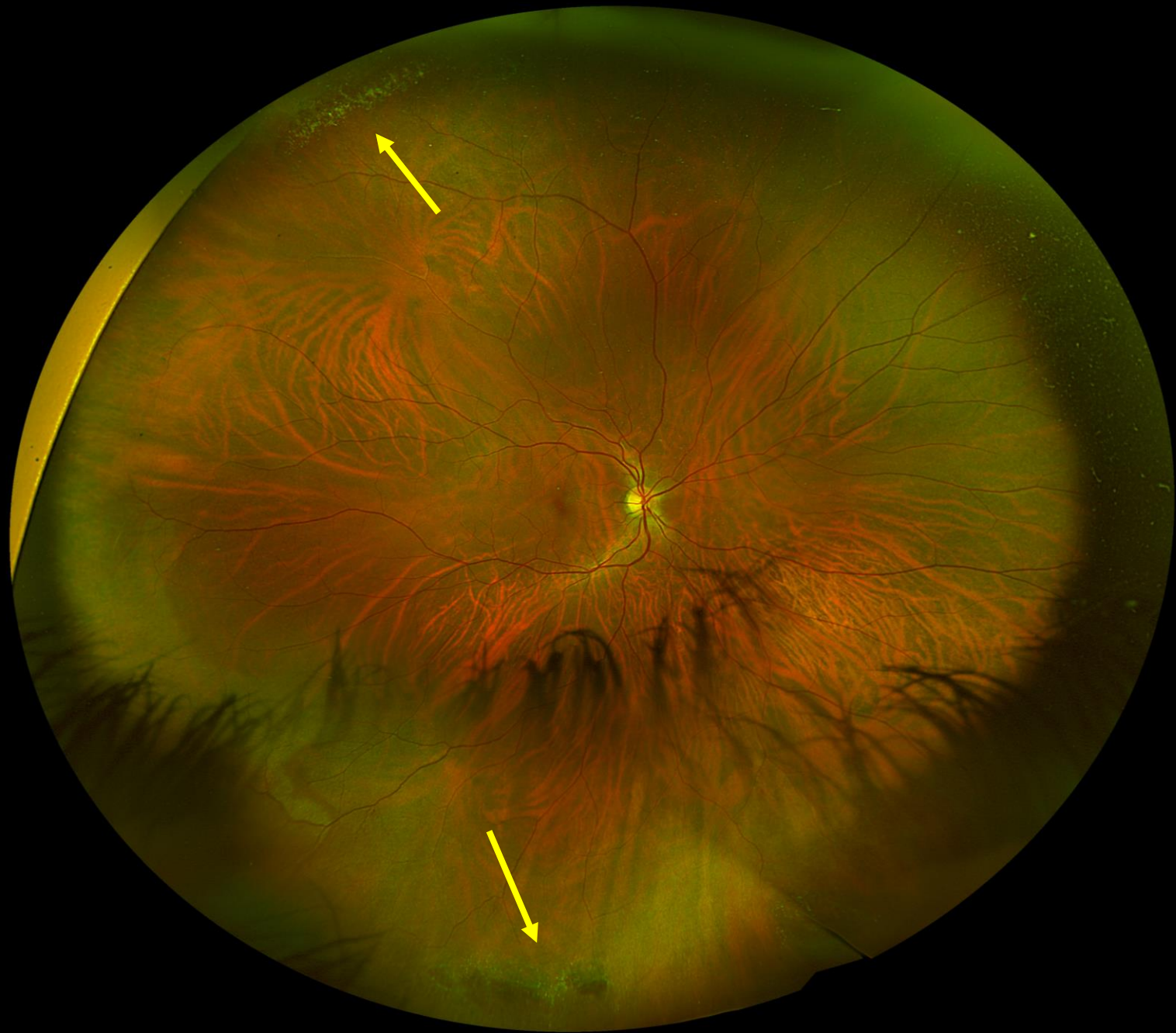
Lesions in temporal and nasal quadrants can be captured by standard UWF itself in most cases

# Correlation with Indirect Ophthalmoscopy







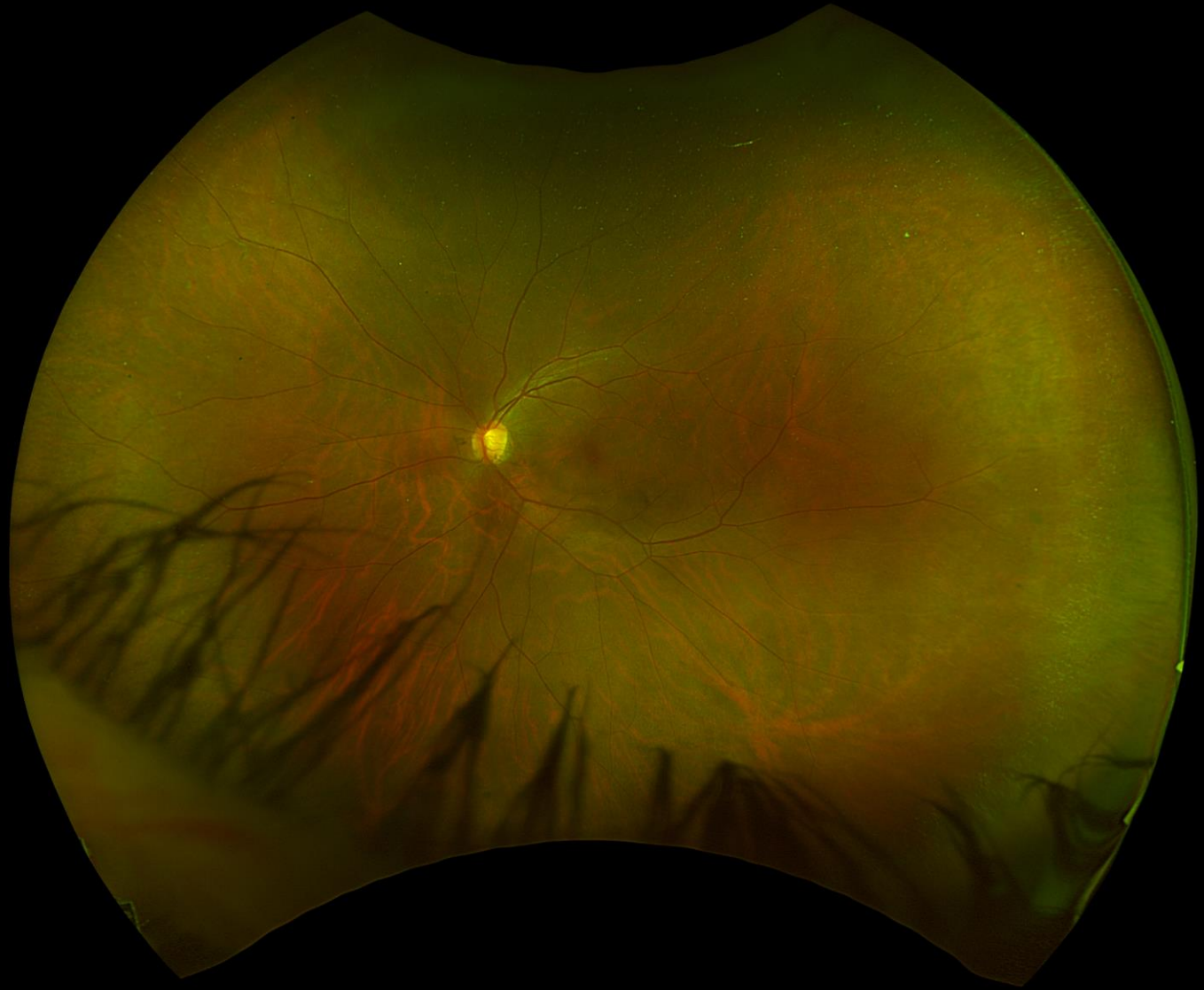


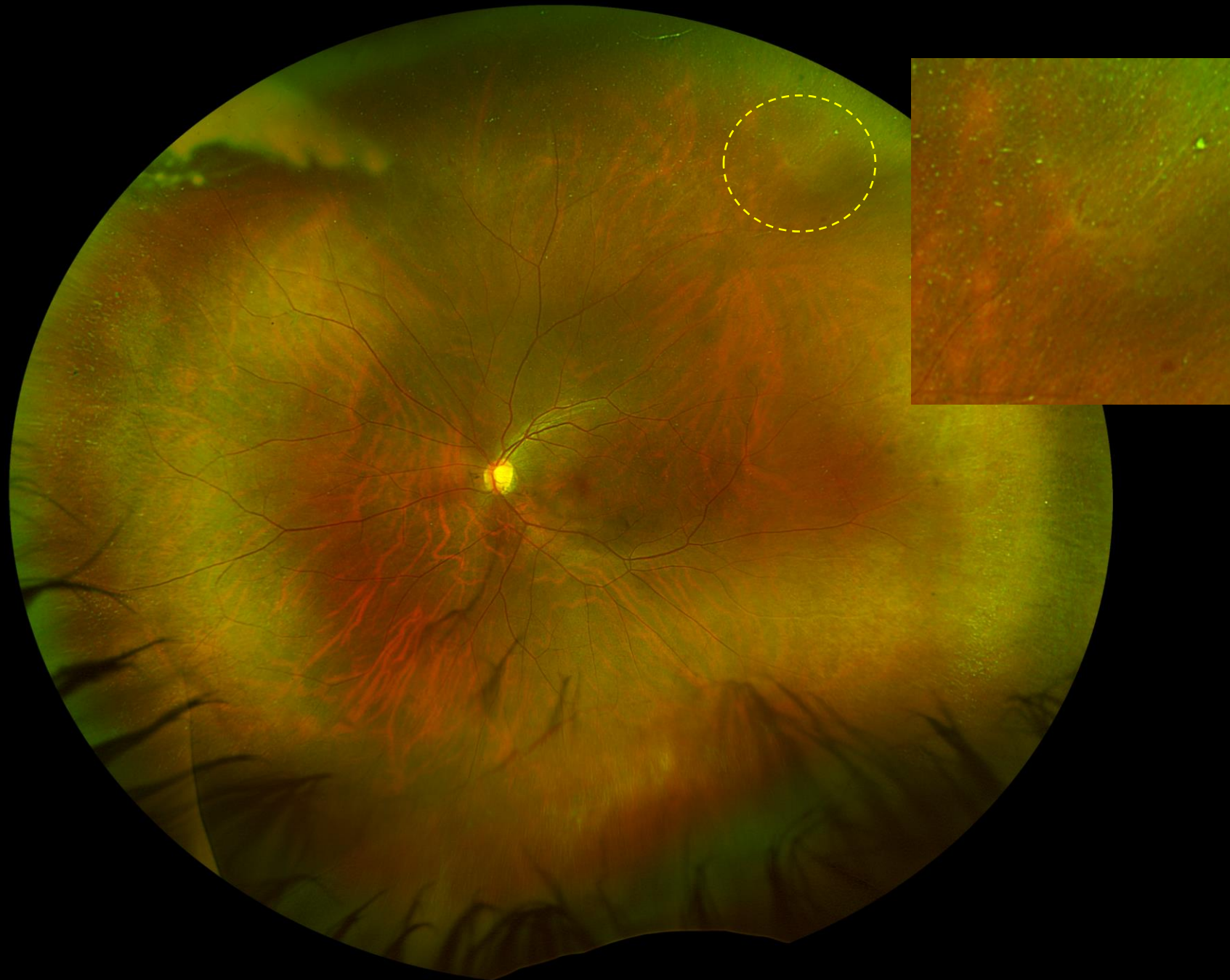


Correlate Montage Findings Clinically









# Conclusion

- The study demonstrates that the automontage technique of UWFI is crucial for accurately identifying peripheral retinal lesions in patients at risk especially in settings where a trained retinal specialist is not available.
- Its ability to detect lesions that might be missed or only partially visible with standard UWF imaging emphasizes the importance of incorporating gaze steering and automontage imaging in the routine evaluation of patients with potential peripheral retinal pathology especially in the superior and inferior quadrants.
- By providing a more comprehensive assessment, automontage imaging can aid in earlier detection and appropriate referral and management of peripheral retinal lesions.

