Is it IRMA?

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What are Intraretinal Microvascular Abnormalities (IRMAs)?

• Ashton (British Ophthalmic Pathologist) in 1953 described them as ‘new dilated channels situated midway between arteries and veins....’

IRMA, arrows.
Obliterated capillaries, arrowheads

- They are found in areas of non-perfusion in diabetic retinopathy.
- Signify end-stage non-proliferative diabetic retinopathy.
Can be difficult to differentiate IRMA and NV!

**IRMA**

- **Location**: intraretinal (not at disc)
- Appearance: Outline may be angulated with sharp corners. Do not cross over major retinal blood vessel
- Fluorescein angiography: Don’t leak
- OCT: Don’t breach the ILM

**New vessels**

- **Location**: grow on top of the retina (often at disc)
- Appearance: Outline may be fan-like with dilated tips. Can cross over major retinal blood vessel
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IRMA appearance: disorganised, angulated outline, do not cross over major vessels
New vessel appearance: rounded outline, fan or branch-like structure, sometimes crosses major vessel
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Fluorescein angiography

- Normal
- Abnormal – dye leaking from new vessels
Fluorescein angiography

- IRMA – no leakage
- NV – small bud leaking dye

Note NV below IRMA
Can be difficult to differentiate IRMA and NV!

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**New vessels**
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- **OCT:** Breach the internal limiting membrane
Top row: IRMA, note ILM is smooth, continuous
Bottom row: NV, note ILM breached and vessel buds projecting into vitreous

Lee C et al. 2015 ‘Re-evaluating the Definition of Intraretinal Microvascular Abnormalities and Neovascularization Elsewhere in Diabetic Retinopathy Using Optical Coherence Tomography and Fluorescein Angiography’ AJO 2015, Volume 159, Issue 1, p 101-110
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IRMA or new vessels?

Ask yourself:

• **Location**: Where are the vessels?

• **Appearance**: **Outline**: Are the vessels rounded or angulated?
  
  **Destination**: Do the vessels cross over a major vessel? Do they stop abruptly?
Acknowledgements

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• Slide 13: Lee C et al. ‘Re-evaluating the Definition of Intraretinal Microvascular Abnormalities and Neovascularization Elsewhere in Diabetic Retinopathy Using Optical Coherence Tomography and Fluorescein Angiography’ AJO 2015, Volume 159, Issue 1, p 101-110