

Retinal Vessel Anomalies – A Retrospective Study

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Background

- Retinal vascular anomalies are **rare congenital variants**.
- Often identified incidentally during routine fundus imaging.
- Can mimic serious pathology → risk of **over-investigation**.

Key entities:

- Situs inversus of retinal vessels (SIRV)
- Congenital retinal macrovessel (CRM)

SIRV

- Congenital misdirection** of retinal vessels (nasal emergence).
- ~80% cases are bilateral.
- Linked to abnormal optic stalk–vesicle development.

CRM

- Large aberrant vessel** crossing macula (usually venous).
- Embryological vascular development error (weeks 15–16).

Aim

To determine the **incidental detection rate** and clinical characteristics of retinal vascular anomalies in a medical retina cohort.

Methods

Retrospective observational study

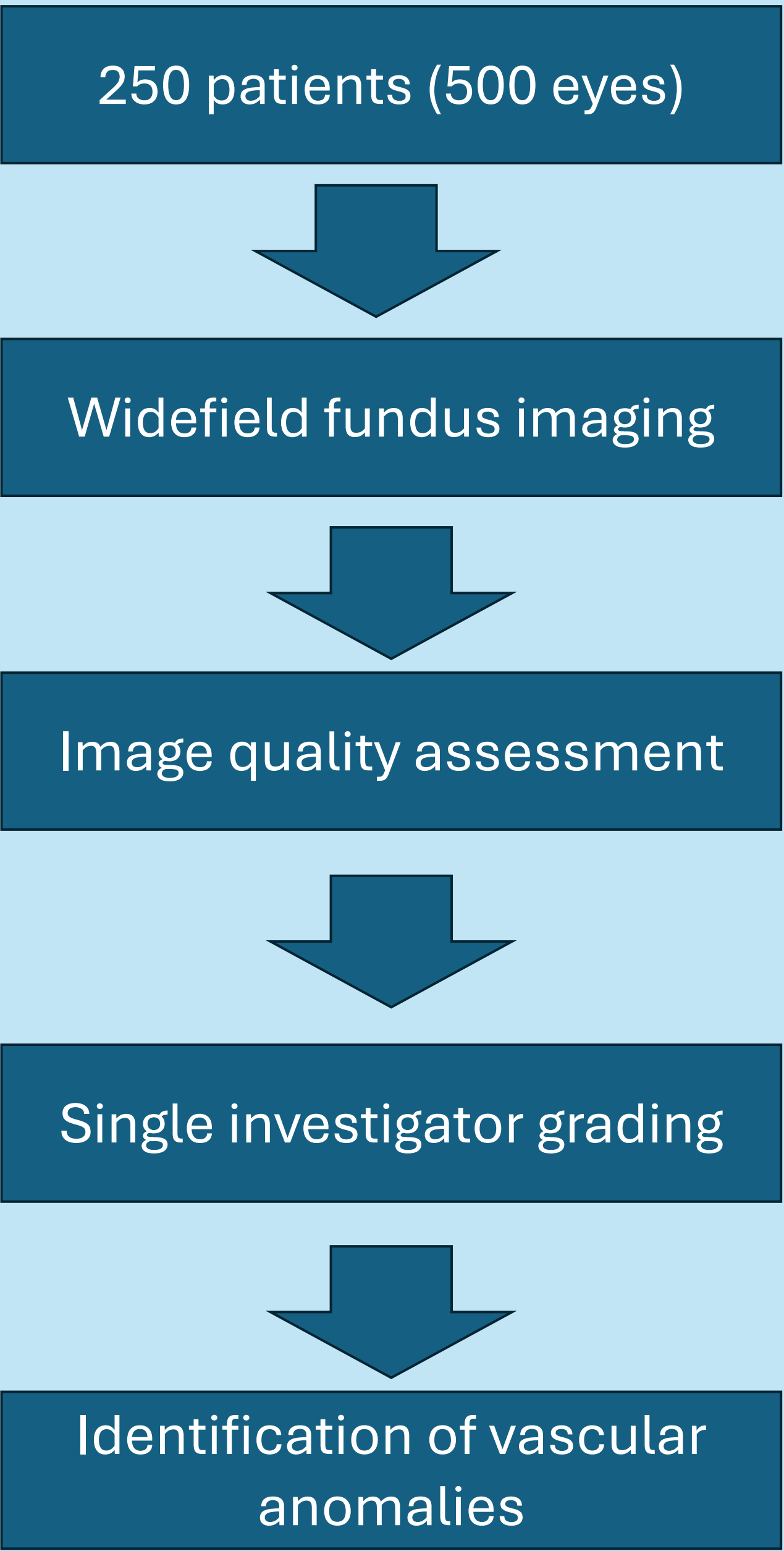


Image Selection Criteria

Inclusion

- Clear optic disc & macula
- High-resolution images

Exclusion

- Media opacity
- Poor focus
- Limited field of view

Results

Detection Rate = 1.2%

Patients reviewed	Patients with anomalies	Eyes affected	Overall detection rate
250 patients (500 eyes)	3 patients	6 eyes	1.2% (6/500 eyes)

Subtype breakdown

- SIRV = 0.8% (4 eyes)** -> 2 patients identified, **bilateral** nasal vessel emergence, findings **consistent** with previously reported bilateral prevalence.
- CRM = 0.4% (2 eyes)** -> 1 patient identified, **bilateral** aberrant macrovessel crossing the macula, represents an **uncommon** bilateral presentation.



SIRV – nasal emergence of retinal vessels



CRM - Aberrant macrovessel crossing the macula

Clinical Relevance

Diagnostic Pitfalls

SIRV may mimic : optic disc hypoplasia, tilted disc, pseudopapilloedema.

CRM may mimic: AV malformations, macular telangiectasia, BRVO.

Why It Matters

Risk of:

- Over-referral
- Unnecessary imaging
- Patient anxiety

Recognition improves **diagnostic confidence**

Key Context

- SIRV prevalence consistent with literature (0.2–0.5%).
- CRM extremely rare (~1 in 200,000); **bilateral cases uncommon**.

Conclusion

- SIRV and CRM are **rare, benign retinal vascular anomalies**.
- Often **incidental and asymptomatic**.
- Can mimic significant pathology if unrecognised.

TAKE HOME MESSAGE

Retinal vascular anomalies are rare, benign variants that can mimic pathology—recognition is essential to avoid over-investigation and improve diagnostic confidence.