Transient Monocular Blindness due to vasospasm
Video-reconstruction of the retinal vasculature during an attack

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History

1. 25 year old builder, 3 day Hx of L TMB
2. First attack on top of scaffolding: 13:30
3. Gradual onset over 1 minute
   Darkening of lower nasal VF
   18:00 complete L blindness for about 3 minutes
4. 1. day: 5-7 attacks (complete L blindness)
   2. day: 10-15 attacks (complete L blindness)
   3. day: over 20 attacks (complete L blindness)
5. Unable to work / loss of money
Personal and Family History

- Smoker (20/d)
- Alcohol occasional
- 3/52 before onset of TMB 25\textsuperscript{th} birthday party:
  - Weed
  - Ecstasy
  - Cocaine
- No FHx of migraine
Examination

- General examination normal
- R 6/5, N4.5, 17/17
  L 6/5, N4.5, 17/17
- Pupils isocor
- No RAPD
- VF: normal
- Disc: normal

During attack:
- LOV starts in L lower nasal VF
- Progression: approx 5-7° / sec
- For about 2 minutes complete L blindness
  - no direct pupil reflex
  - normal indirect pupil reflex
- Duration 2 minutes
- Recovery 1 minute
Central retinal artery & vein

![Graph showing the change in diameter of central retinal artery and vein over time](image)

- **Central retinal artery**
- **Central retinal vein**
Arterioles

Diameter in %

Time in seconds

Superior temporal arteriole
Inferior temporal arteriole
Veinules

Diameter in %

Time in seconds

Superior temporal veinule
Inferior temporal veinule
Permanent versus transient LOV

**Embolic**
- Von Graefe (Arch Ophth 1859)
- Gowers (Lancet 1875)

**Vasospasm**
- Lundie (Ophth Rev 1906)
- Harbridge (Ophthalmology 1906)
- Bruner (Am J Ophth 1921)
- Traquair (Trans Ophth Soc UK 1948)
- Fisher (Arch Ophth 1952)
Pathogenesis

**Platelet-Fibrin theory**
- Fisher
  Neurology 1959
- Ross
  Lancet 1961

**Retinal Vasospasm**
- Burger *et al.*
  NEJM 1991
- Winterkorn *et al.*
  NEJM 1993
- Teman *et al.*
  NEJM 1995
Patient Management

Aetiology

- Embolic
- Hypercoaguability
- Vasculitis
- Papilloedema
- Carotid stenosis
- Postural hypotension
- Vasospasm

Treatment

- Aspirin
- Anticoagulation
- Steroids
- Carotid endarterectomy
- Salt intake
- Ca-channel blockers
  - Nifedipine (40-80 mg/d)
Conclusion

- 25 year old patient with TMB
- Retinal vasculature
  - primary site: arterioles inside the disc
  - venule diameter reduced due to low blood supply
- Vasospasm as differential diagnosis in TMB
  - no observation of emboli
  - no response to Rx with Aspirin/ anticoagulation
- Patient management: Nifedipine