# “Hot Seat and Cold Feet": Navigating Pressurised Emergency Eye Care and Exploring the Role of OCT/OCTA in Acute-Onset Retinal Conditions Mimicking Optic Neuropathy.

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**Introduction:** Sudden loss of vision, especially when accompanied by loss of colour vision, a relative afferent pupillary defect (RAPD), and visual acuity dropping below 6/60, is an alarming symptom that often leads clinicians to suspect optic neuropathy, particularly conditions like Anterior Ischemic Optic Neuropathy (AION) or Posterior Ischemic Optic Neuropathy (PION). However, retinal conditions such as Paracentral Acute Middle Maculopathy(PAMM) & Acute Macular Neuroretinopathy (AMN), especially Type 2 AMN, can present with similar symptoms, causing diagnostic confusion. This poster explores classic findings on Optical Coherence Tomography (OCT) and OCT Angiography (OCTA) along with visual fields that can aid in distinguishing between optic neuropathy and retinal diseases, guiding appropriate management and treatment .

**Methods:** Ten patients (mean age 62 years; range 47–75; 5 males, 5 females) presented with acute vision loss. Initial visual acuity averaged 5/60 (range 1/60–6/60). A relative afferent pupillary defect (RAPD) was observed in 9 patients (90%), and 70% reported colour vision loss. Most had underlying vascular risk factors, including hypertension, hyperlipidaemia, or statin use.
The initial working diagnoses included: Posterior **Ischemic Optic Neuropathy (PION) in** 3 patients ,**Anterior Ischemic Optic Neuropathy (AION) in** 4 patients and **Demyelinating Optic Neuropathy in** 3 patients. Some patients were empirically started on high-dose corticosteroids (60 mg/day) for suspected Giant Cell Arteritis (GCA) or vascular optic neuropathy.

| Final Diagnosis | OCT Features | OCTA Features | No. of Patients |
|---|---|---|---|
| PAMM | Hyperreflectivity in INL | Deep capillary plexus flow loss | 4 |
| AMN | Outer retinal hyperreflective lesions | DCP ischemia | 3 |
| PION | RNFL thinning, no disc edema | Optic nerve head hypoperfusion | 2 |
| AION | RNFL thickening, disc edema | Posterior ciliary artery hypoperfusion | 1 |

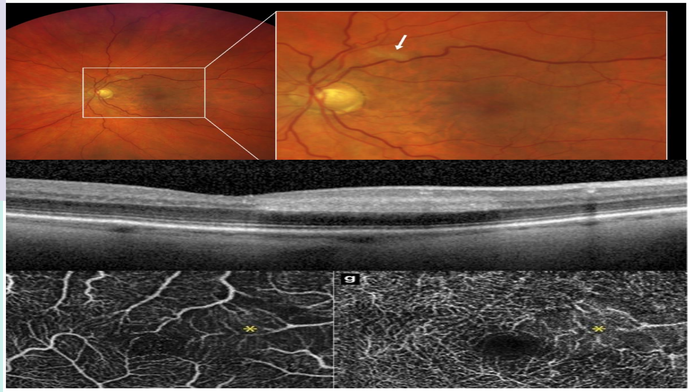
**Treatment and Outcomes**

- **Steroid Therapy:** Initiated in 5 patients for suspected GCA. No benefit observed in PAMM/AMN cases, where retinal ischemia, not optic nerve inflammation, was the cause.
- **Systemic Risk Management:** All patients were on statins; 80% on intensified lipid control. 70% were receiving antihypertensive therapy.
- **PAMM/AMN Management:** Conservative, focusing on systemic control without systemic steroids or biologics.

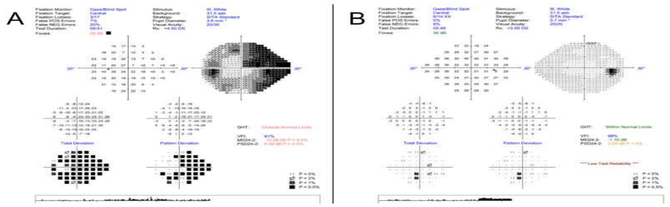
**6-Month Follow-Up**

- **PAMM/AMN (n=7):**
  - 6 patients showed stable or modestly improved vision
  - 1 patient had slight visual decline, but no lesion progression on OCT
- **Optic Neuropathy (n=3):**
  - 2 patients (66%) had mild visual improvement
  - 1 patient (33%) showed no change despite steroid therapy

## PARACENTRAL ACUTE MIDDLE MACULOPATHY

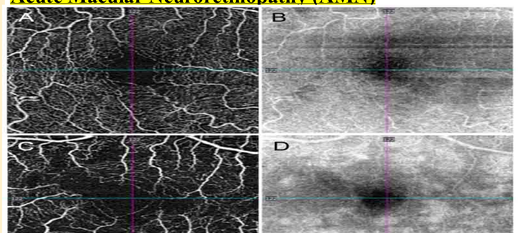


**OCT Findings : Hyperreflective Band in Inner Nuclear Layer (INL)**
PAMM presents as a hyperreflective band within the INL, extending from the inner plexiform layer (IPL) to the outer plexiform layer (OPL).
**OCTA findings (g)**: OCTA of the superficial and deep capillary plexi (3 × 3 mm scans), respectively, show reduced parafoveal flow that is more evident in the deep plexus (asterisks).



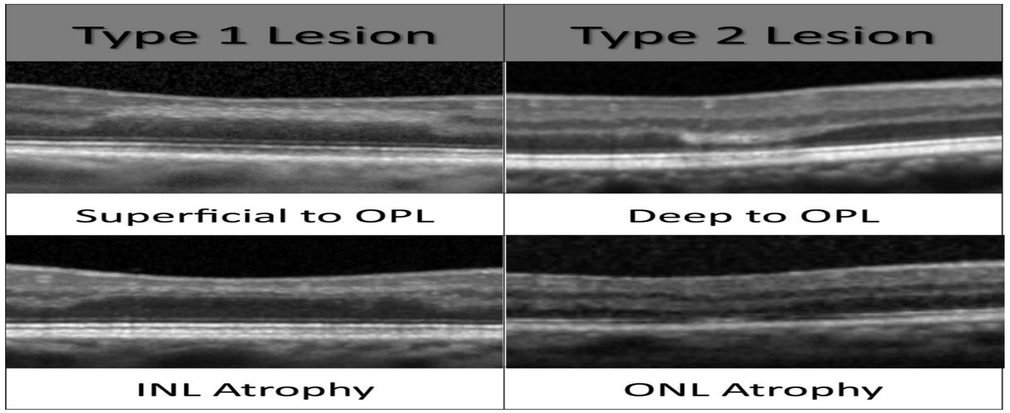

Central 24-2 Humphrey visual field testing of (A) the left eye, which shows diffuse visual field constriction and a pronounced superonasal deficit involving central fixation, and (B) the right eye, which shows mild, nonspecific defects.

## Acute Macular Neuroretinopathy (AMN)



Optical coherence tomography angiography (3×3 mm) of the superficial capillary plexus. There is mild irregularity of the foveal avascular zone in the right eye (A, angiogram), with homogeneous reflectivity pattern on the corresponding en face structural slab (B). The left eye has an irregular foveal avascular zone with perifoveal vascular flow loss (C), and splotchy irregularity enface (D) corresponding to the hyper reflectivity seen

## ACUTE MACULAR NEURORETINOPATHY




## Conclusion

OCT and OCTA imaging provide critical diagnostic information, revealing characteristic findings of retinal ischemia in PAMM and AMN. High-dose steroids, initially prescribed for suspected giant cell arteritis (GCA) or ischemic optic neuropathies, were ineffective for PAMM and AMN, as these conditions are driven by retinal ischemia rather than optic nerve ischemia. This underscores the importance of accurate diagnosis to avoid unnecessary treatments and potential harm, as steroids can worsen PAMM by increasing blood pressure.
Patients with PAMM and AMN, when managed conservatively with observation and treatment for underlying conditions, demonstrated stable or improved visual outcomes. This contrasts with optic neuropathy patients who showed minimal improvement with steroids, highlighting the significance of early differentiation for optimal management.
Additionally, this study emphasizes the cost-effectiveness of OCT and OCTA. These imaging techniques provide a less expensive, non-invasive alternative to MRI and CT scans, offering quicker and more accurate diagnoses. By reducing the need for more costly imaging and unnecessary treatments, OCT and OCTA contribute to both improved clinical outcomes and reduced healthcare costs. Therefore, their use in diagnosing acute onset retinal conditions mimicking optic neuropathy can significantly enhance patient care while ensuring cost savings for healthcare systems.

**References:**

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