

PAPILLEDEMA VS. PSEUDOPAPILLEDEMA IN CHILDREN

CASE PRESENTATION

Presented by

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12 years old child came to outpatient clinic complaining about headache and blurring of vision of 3 weeks duration. Headache is intermittent and associated with nausea.

◦ Examination:

BCVA

IOP

External eye exam

Pupils

Color test

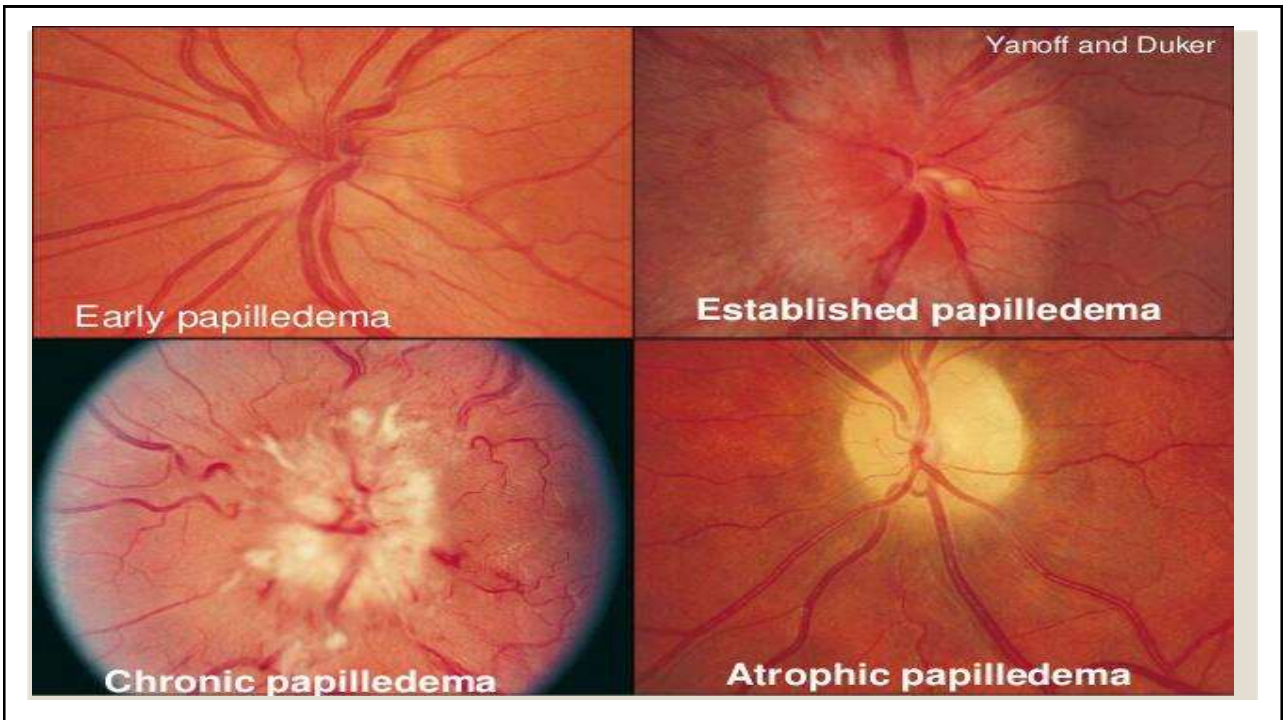
Motility

Fundus examination



Differential diagnosis:

- Papilledema.
- Pseudopapilledema.
- Papillitis.
- Optic neuropathy.



Idiopathic intracranial hypertension:

Neurological syndrome of raised intracranial pressure (>250mm H₂O) in absence of the triad:

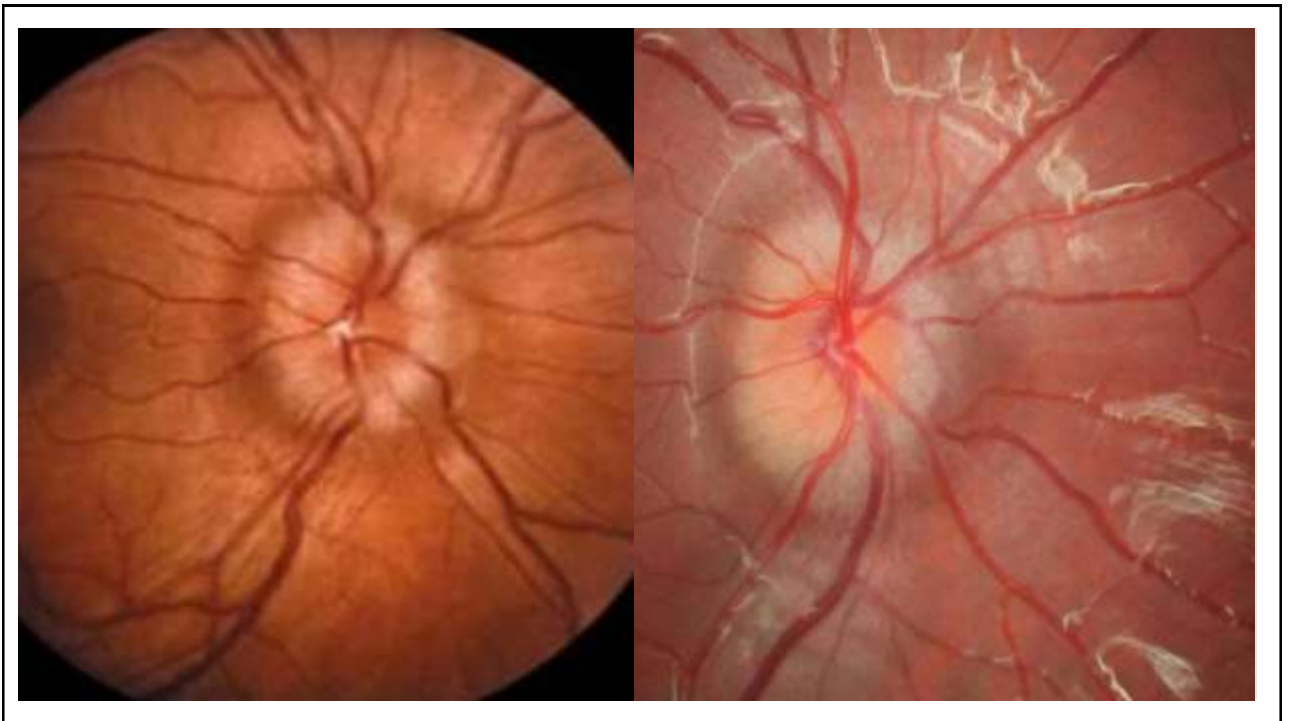
- Space occupying lesion.
- Abnormal CSF.
- Hydrocephalus.

Pediatric IIH

- IIH mainly occurs among obese women of childbearing age. Although its prevalence among the pediatric population is not known, it is not uncommon among the young. In children younger than 6 years, a specific cause of intracranial hypertension can usually be identified. Primary or idiopathic cases of intracranial hypertension are usually seen after age 11 years.

Papilledema versus Pseudopapilledema:

- History.
- Fundus examination.
- Autofluorescence.
- B-scan.
- CT Scan /MRI
- OCT.
- Visual field.
- Fluorescein angiography.



Fundus examination

1. Retinal haemorrhage:

- More common in papilledema
- May be present in disc drusen and the drusen.



Fundus examination

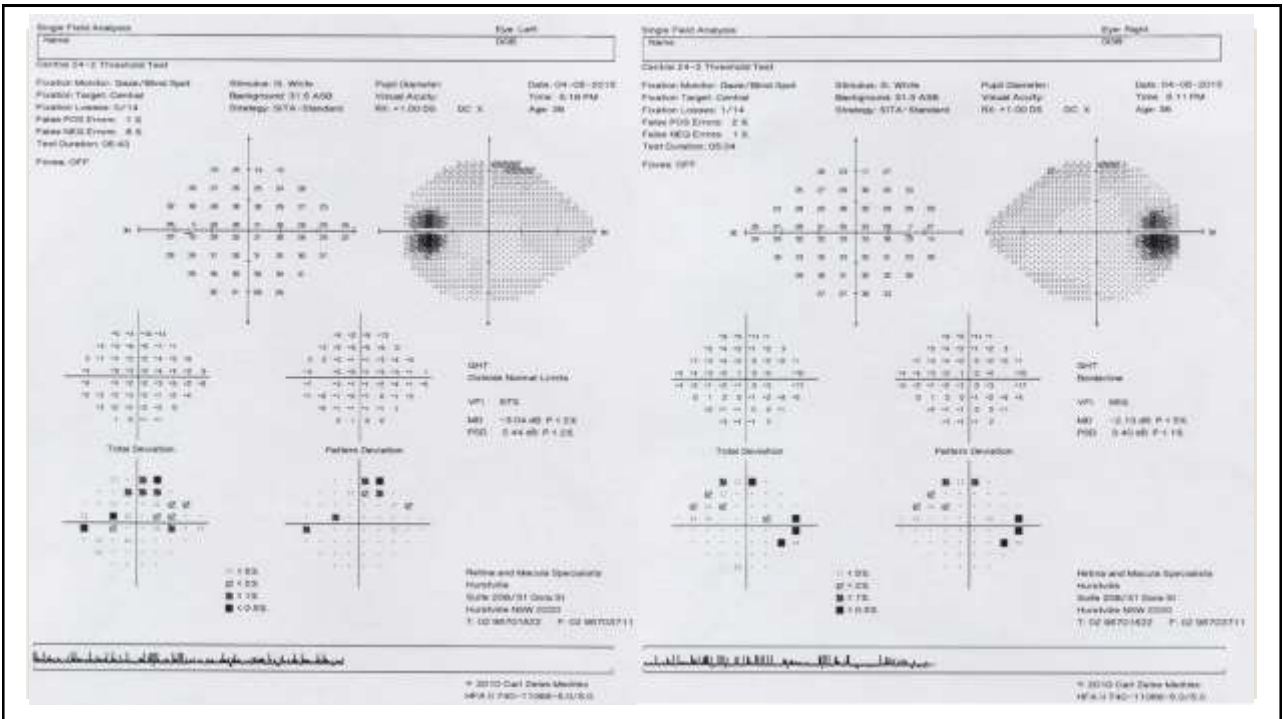
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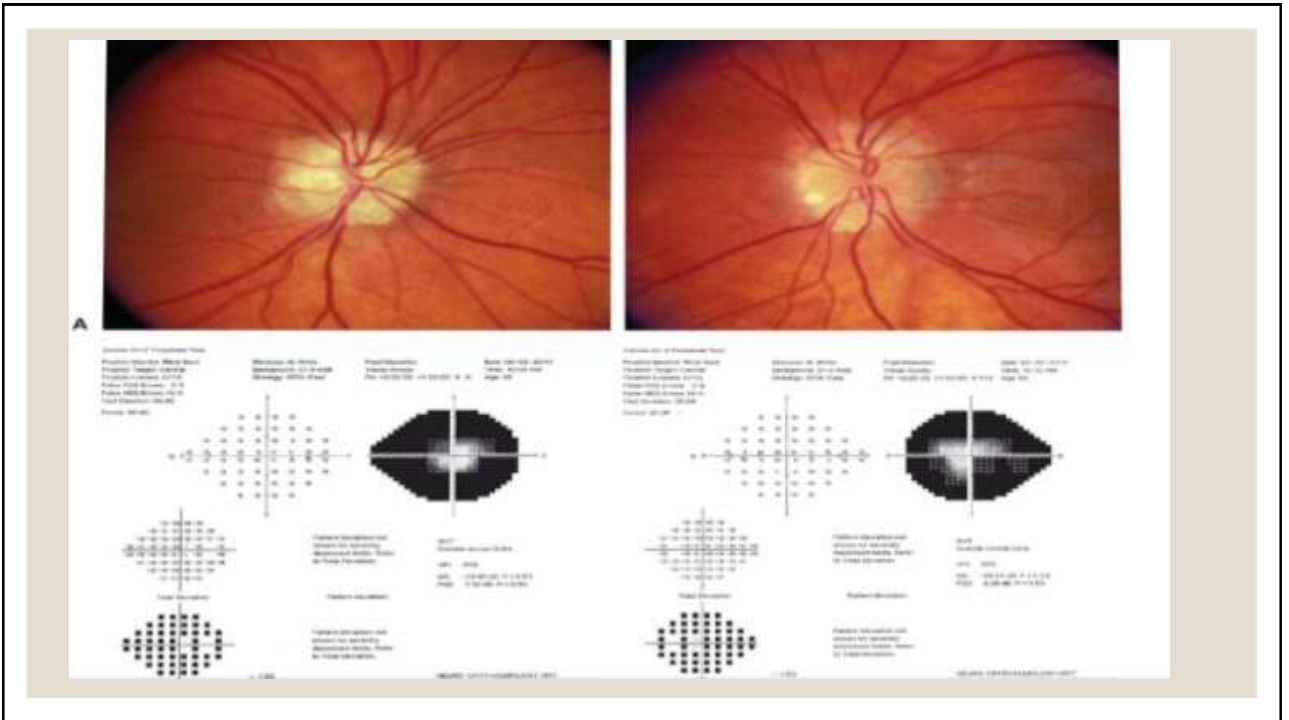
- More common in papilledema
- May be present in disc drusen and the drusen.



Spontaneous venous pulsation :

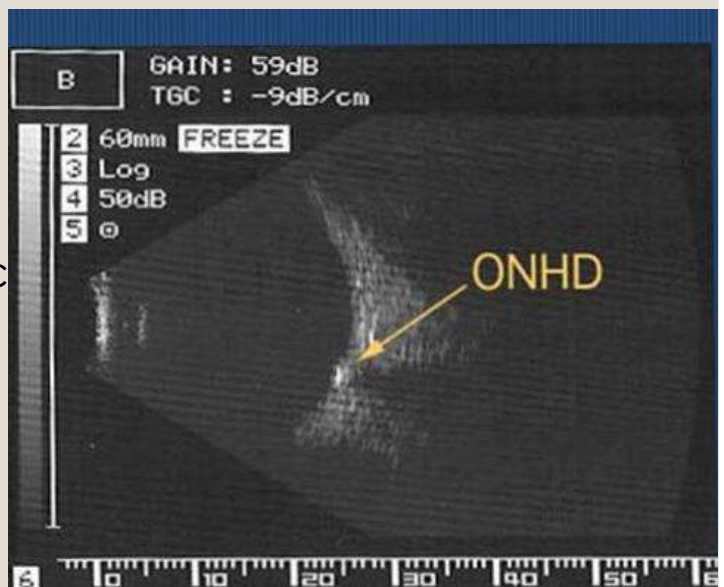
- The presence of spontaneous venous pulsations suggests the absence of papilledema.



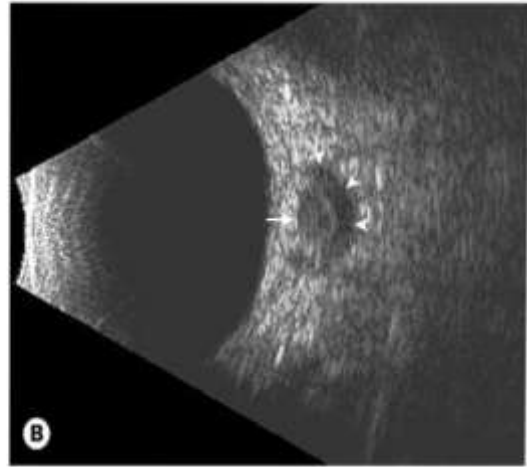
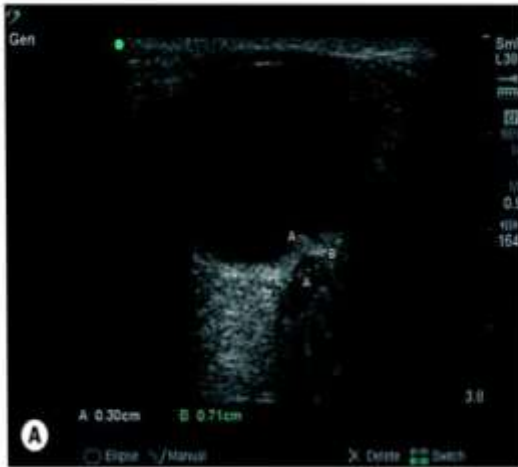


B scan

- Calcified drusen.
- Hyperechoic defect

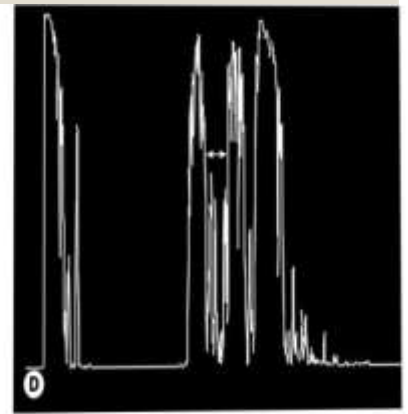
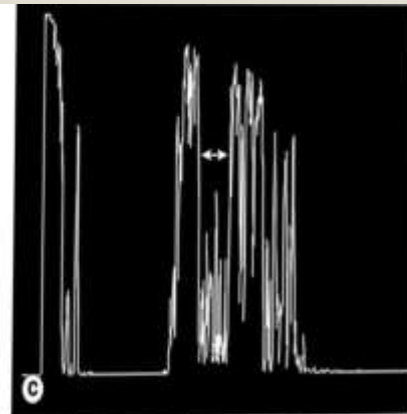


- B scan ultrasonography can be used to aid in distinguishing between papilledema and pseudopapilledema with 80-90 %



- Lateral gaze (thirty degree test) commonly leads to a 10% reduction in diameter on A scan measurement in the presence of excess fluid, but not if normal or if increased ONSD is due to infiltration.

- Fluid-related ONSD as inflammation at



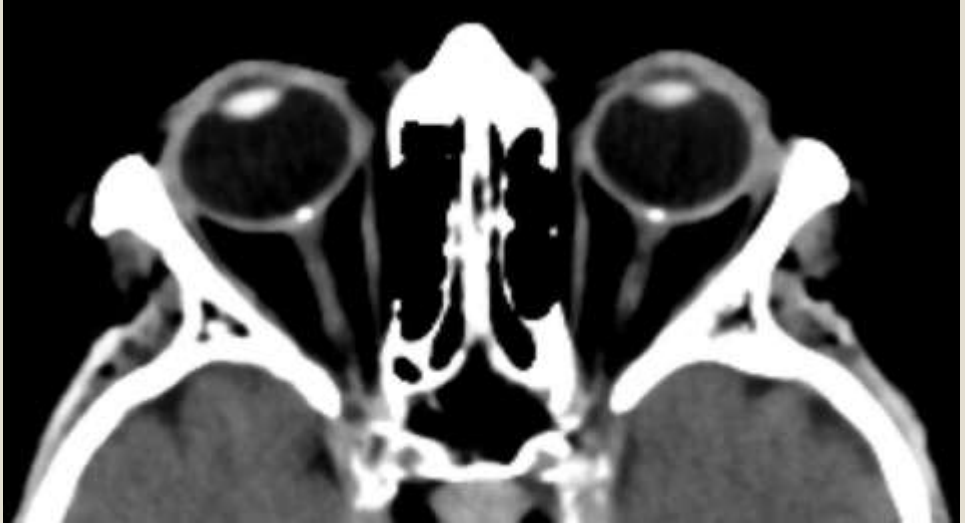
- The nerve must be scanned axially for the measurement to be accurate, and there is a degree of operator dependence.

Autofluorescence

- Only in superficial dru



CT scan



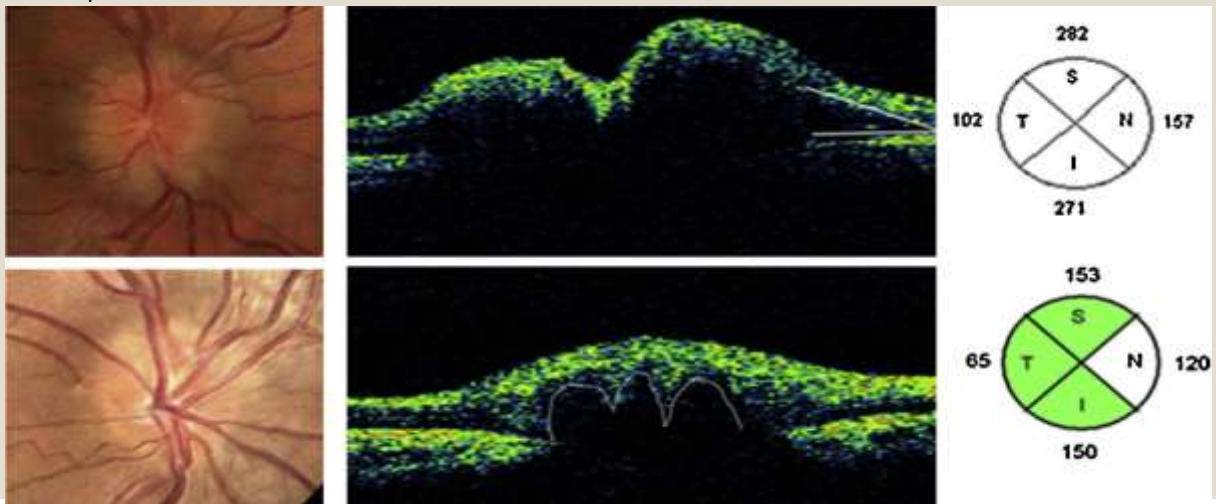
MRI

- Evaluate the presence of intracranial mass lesions, cerebral venous sinus thrombosis and nonspecific indicators of increased intracranial pressure.

OCT

Spectral domain OCT, and more specifically the enhanced depth imaging (EDI) technology, represents a turning point in directly visualise drusen, to quantify their size and to recognise their impact on neighbouring structures inside the optic nerve head.

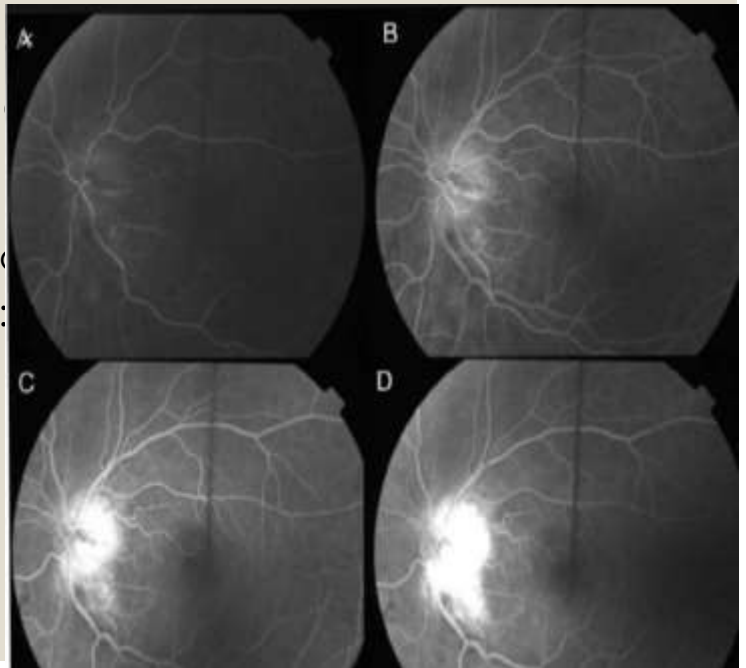
- Top: internal contour of the hypo-reflective space between the retina and the RPE in horizontal V shape in the papilloedema.
Bottom: fluted contour of said space, ripple-like margins in pseudoedema due to buried drusen.

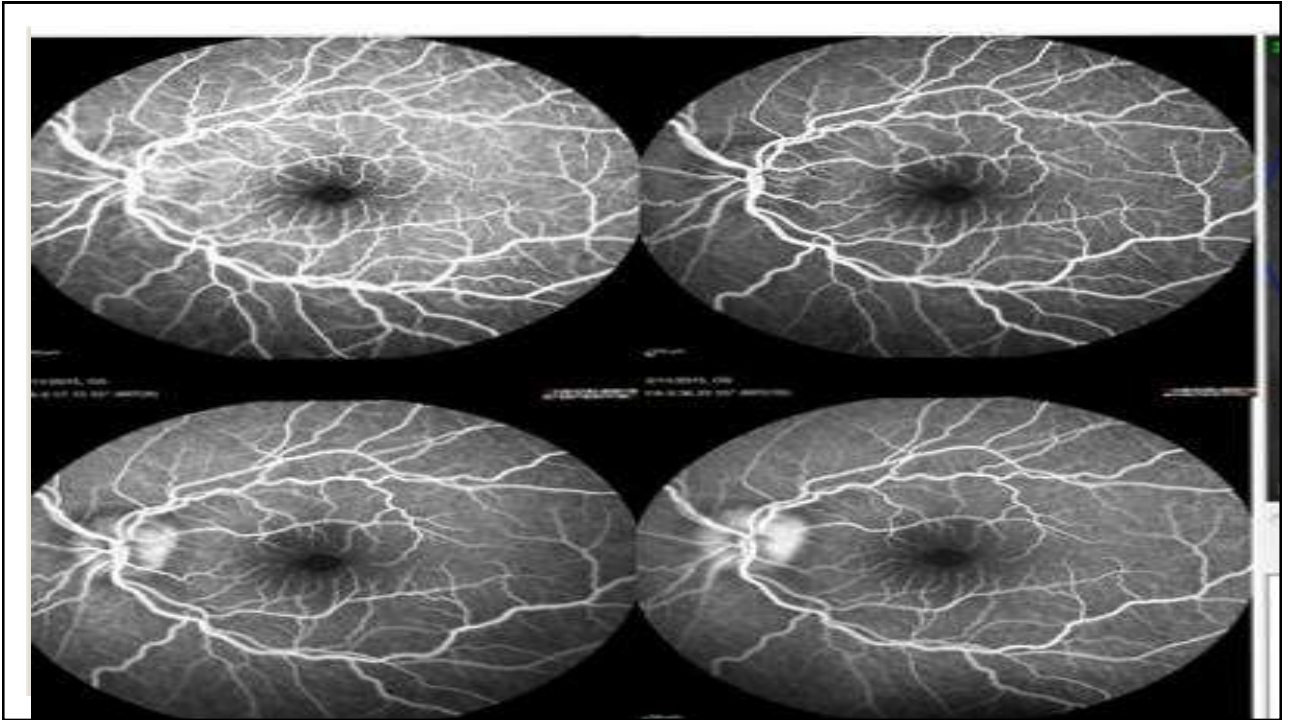


Differentiation is based on differences in the morphology of the hyporeflective space between the neurosensory retina and the pigment epithelium, which is present in both entities. In papilloedema, said space is defined by an internal smooth contour that gradually narrows down and towards the periphery describing a horizontal "V", whereas in the case of drusen the contour is less smooth, undulating and with a brusque thickness reduction towards the periphery. In contrast with papilloedema, where said space comprises liquid, OND exhibit a nodular elevation and shade effect due to the high reflectance of drusen that marks optically empty spaces.

Fluorescence

- **Papilledema** :Hyperfluorescence
- **Pseudopapilledema** : leakage.





AMERICAN ACADEMY
OF OPHTHALMOLOGY

Accuracy of Diagnostic Imaging Modalities for Classifying Pediatric Eyes as Papilledema Versus Pseudopapilledema

- **CONCLUSIONS:** The best imaging technique for correctly classifying pediatric eyes as PPE or PE is FA. Other imaging modalities, if used in isolation, are more likely to lead to misinterpretation of PE as PPE, which could potentially result in failure to identify a life-threatening disorder causing elevated intracranial pressure and papilledema.

- **Back to our Patient:**
- Male 12 years old child.
- Systemically free.
- Hyperfluorescence of optic



Thank you