Uveitic & Neurological manifestations

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CNS Diseases and Uveitis

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Ugo Murialdo[1], MD

- **Demyelinating diseases**
  - Multiple sclerosis
  - Monosymptomatic optic neuritis
- **Infectious diseases**
  - Viral (herpes virus, cytomegalovirus, West N i l e v i r u s, human T- c e l l lymphotropic virus (HTLV-1), acquired immunodeficiency syndrome (AIDS), subacute sclerosing panencephalitis (SSPE)
  - Bacterial (cat-scratch disease, Whipple's disease)
  - Mycobacterial (tuberculosis, leprosy)
  - Spirochetal (lyme, syphilis)
  - Protozoal (toxoplasmosis, pneumocystis carinii)
  - Nematodal or parasitic (gnathostomiasis)
- **Inflammatory or Autoimmune**
  - Polyarteritis nodosa
  - Wegener granulomatosis
  - Rheumatoid arthritis and
  - Sarcoidosis
  - Behçet's disease
  - VKH disease
  - APMPPE (acute posterior multifocal placoid pigment epitheliopathy)
- **Neoplastic**
  - Lymphoma
  - Paraneoplastic syndromes

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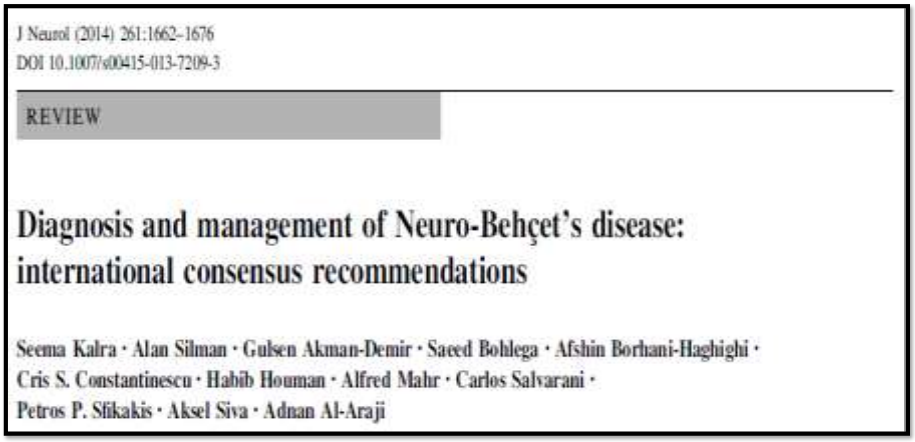

J Neurol (2014) 261:1662–1676
DOI 10.1007/s00415-013-7209-3

REVIEW

Diagnosis and management of Neuro-Behçet's disease: international consensus recommendations

Seema Kalra · Alan Silman · Gulsen Akman-Demir · Saeed Bohlega · Afshin Borhani-Haghighi · Cris S. Constantinescu · Habib Houman · Alfred Mahr · Carlos Salvarani · Petros P. Sfikakis · Aksel Siva · Adnan Al-Araji

International consensus recommendation (ICR) criteria for NeuroBehcet disease (NBD) diagnosis

- **Definite NBD**

1. Satisfy the ISG criteria for BD
2. Neurological syndrome supported by :
   a. Neuroimaging
   b. CSF
3. No better explanation for the neurological findings

- **Probable NBD**

1. Neurological syndrome with systemic BD but not satisfying the ISG criteria
2. A non-characteristic neurological syndrome occurring in the context of ISG criteria-supported BD

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ISCBD

Recurrent oral ulceration (obligatory)	minor aphthous, major aphthous, or herpetiform ulceration (observed by physician or patient); recurring at least 3 times in one 12-month period
Plus 2 of	
Recurrent genital ulceration	aphthous ulceration or scarring (observed by physician or patient)
Eye lesions	anterior uveitis, posterior uveitis, or cells in vitreous on slit lamp examination; or retinal vasculitis observed by ophthalmologist
Skin lesions	erythema nodosum (observed by physician or patient), pseudofolliculitis, or papulopustular lesions; or acneiform nodules (observed by physician) in post-adolescent patients not on corticosteroid treatment
Positive pathergy test	read by physician at 24–48 h
Findings applicable only in absence of other clinical explanations.	

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Recognised neurological syndromes

❑ **Parenchymal syndrome**

- Brainstem: ophthalmoparesis, cranial neuropathy, cerebellar or pyramidal dysfunction.
- Myelopathy.
- Cerebral: encephalopathy, hemiparesis, hemisensory loss, seizures and dysphasia, and mental changes.
- Optic neuropathy
- Multifocal

❑ **Non-parenchymal syndromes**

- Cerebral venous thrombosis
- Intracranial hypertension syndrome
- Intracranial aneurysm
- Acute meningeal syndrome

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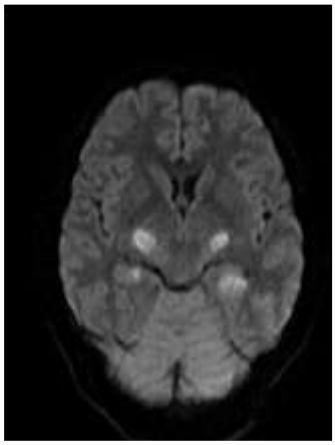
Characteristic MRI findings in NBD

❑Parenchymal NBD

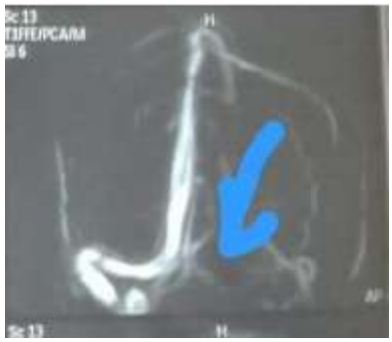
Nature	Site
• Acute : hypointense on T1, hyperintense on T2 • Chronic: non-enhancing, atorphy esp. brain stem	• Brain stem • Cerebral: subcortical, paraventricular



Characteristic MRI findings in NBD

❑ **Non-parenchymal NBD**

- MR venography shows cerebral sinus or vein thrombosis.
- Normal appearances are seen in IIH.
- Meningeal enhancement is seen in acute meningeal syndrome.



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Characteristic CSF finding

- Increased cells
- Increased proteins
- High IL-6

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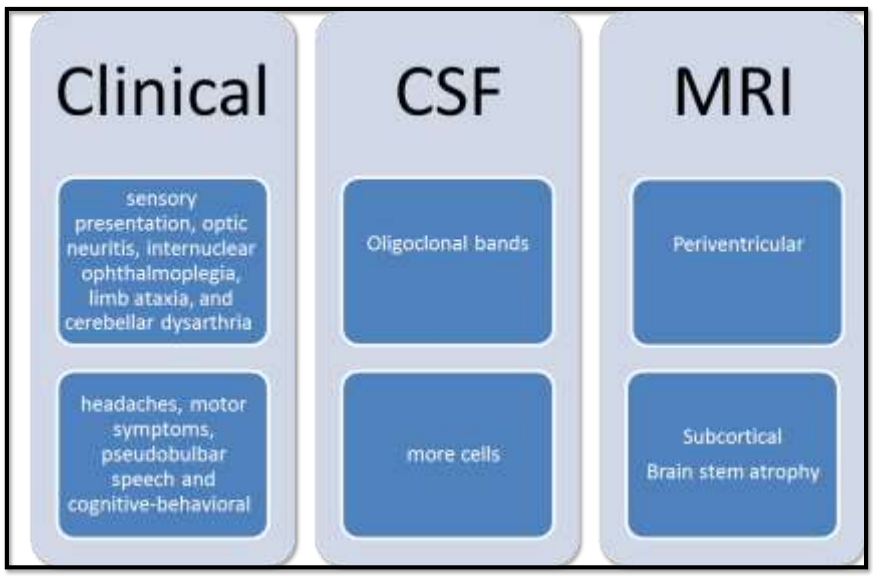
Specific conditions to be excluded:

- Multiple sclerosis
- Stroke affecting the young
- Intracranial hypertension
- Meningo-encephalitis
- Myelitis
- Uveo-meningitic syndromes including sarcoidosis, systemic lupus erythematosus, and primary Sjo¨gren's syndrome
- CNS neoplasms i.e lymphoma
- Neurological complications of therapies for BD

NBD vs MS



IL-6

- Serum IL-6 levels have been reported to correlate with BD disease activity, although this finding has not been consistently reproduced.

HLA-B51/5

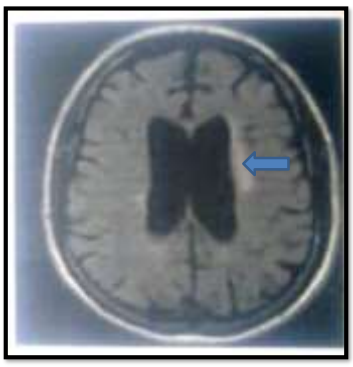
- In addition, the prevalence of HLA-B51/B5 among subjects with NBD is not dissimilar to that found in patients with BD without neurological involvement

Treatment

- IV methyl prednisolone for 3–10 days followed by a maintenance oral steroids.
- Azathioprine a first-line DMT; mycophenolate mofetil, methotrexate, and cyclophosphamide.
- Biologics (infliximab, adalimumab, etanercept) or interferon alpha, when first line therapies are ineffective or intolerable.
- Cyclosporin in BD patients ????
  - ✓ potential association with neurological complications.
  - ✓ avoided in patients with a history of NBD.
  - ✓ should be stopped when BD patients develop neurological features.
- Anticoagulants, which is a standard treatment of CVT of any aetiology. ????
  - ✓caution should be taken to rule-out a systemic aneurysm

- A 36 year old male diagnosed as Behçet (orogenital ulcers and uveitis)
- Presenting with emotional liability and personality changes.
- History of acute attack of LL weakness 1 year ago, & convulsions & bulbar symptoms 3 years ago.
- Was on pulse steroids then On cyclophosphamide monthly and shifted to azathioprine 4 months ago.

- MRI, MRV, MRA:
  - ✓ Variable sized foci of abnormal signals in both frontal & parietal lobes.(mostly vasculitic)
  - ✓ Brain atrophic changes
  - ✓ Occluded sigmoid and transverse sinuses.

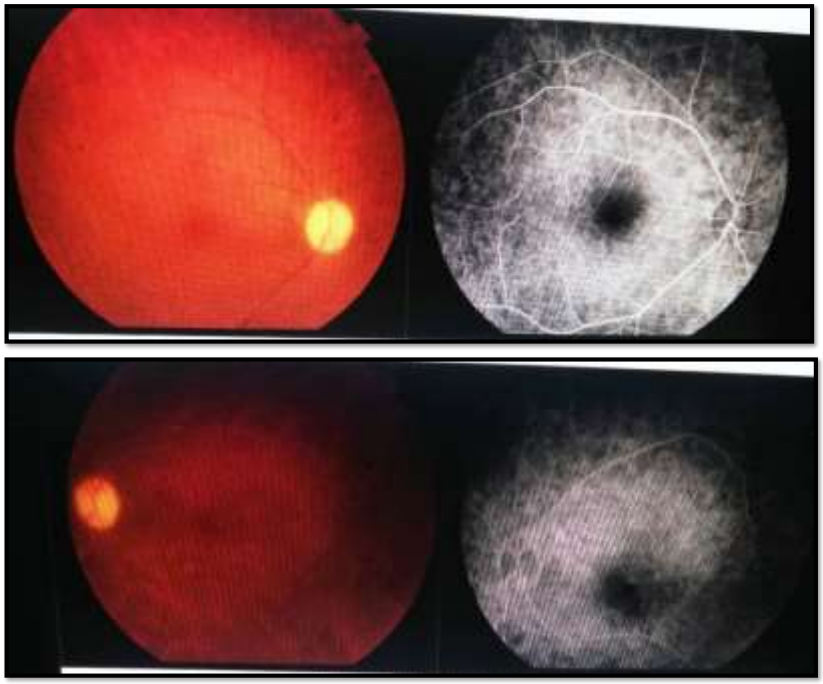


- Psychiatric consultation:

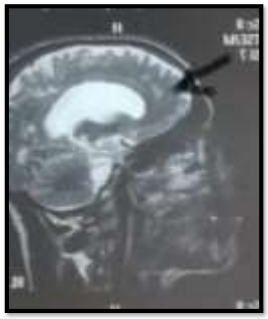
Old frontal lobe lesions

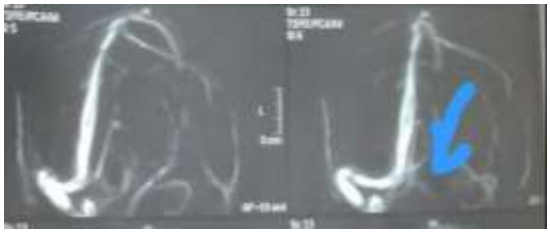
Ophthalmological consultation:

- Vision: 6/12 6/9
- AC cells: +0.5 +1
- Pupil: RAPD RRR
- Fundus: vitreous cell
  pale disc temporal pallor
  sheathed attenuated vessels
  blunt foveal reflex



- MRI, MRV & MRA:
  - ✓ Stationary course regarding atrophic brain changes and frontoparietal insults
  - ✓ Occluded sigmoid and tranverse sinuses.

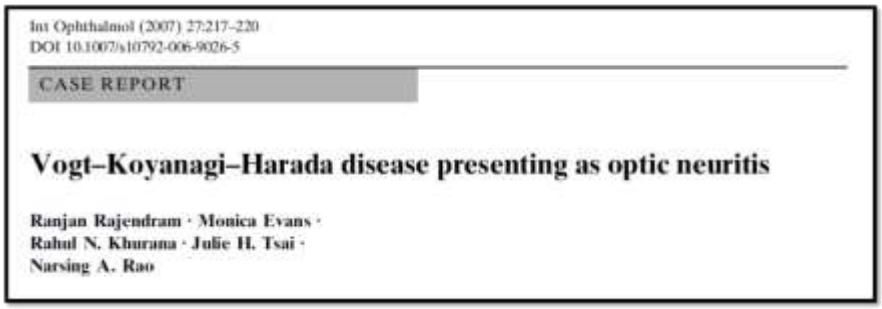




- VKH is characterized by bilateral diffuse choroiditis with exudative retinal detachment.

- In addition to visual loss, the presence of hearing loss, tinnitus, poliosis, vitiligo, or meningismus could be helpful for the diagnosis.

- However, in cases that show only marked bilateral optic disc edema without any signs or symptoms, it could be difficult to consider VKH, and other conditions such as elevated blood pressure/intracranial pressure and inflammation or infection may be considered in the DD.



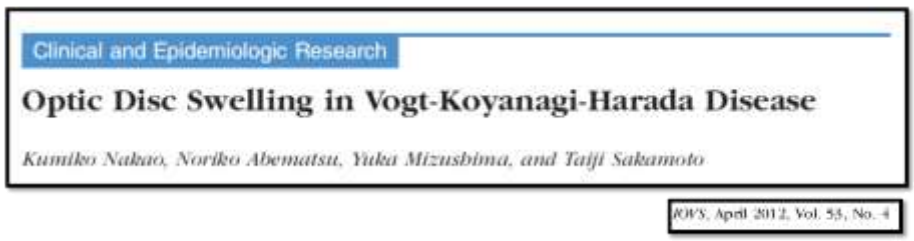
Int Ophthalmol (2007) 27:217–220
DOI 10.1007/s10792-006-9026-5

CASE REPORT

Vogt–Koyanagi–Harada disease presenting as optic neuritis

Ranjan Rajendram · Monica Evans · Rahul N. Khurana · Julie H. Tsai · Narsing A. Rao

- In the acute uveitic stage of VKH disease choroiditis may cause papillitis, which is similar to optic neuritis.
- VKH should be considered in the DD of bilateral optic disc swelling, even in the absence of the characteristic extraocular manifestations.



Clinical and Epidemiologic Research

Optic Disc Swelling in Vogt-Koyanagi-Harada Disease

Kumiko Nakao, Noriko Abematsu, Yuka Mizushima, and Taiji Sakamoto

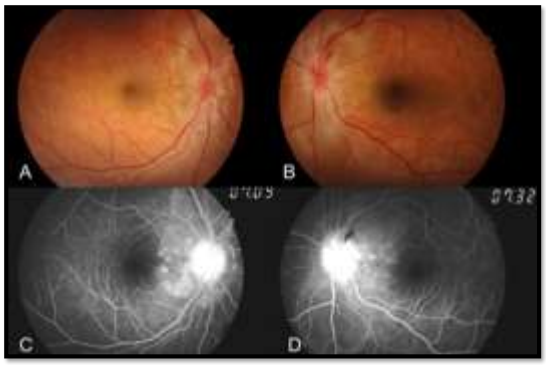
IOVS, April 2012, Vol. 53, No. 4

- VKH patients who had disc swelling have developed irreversible visual field defects.
- FFA showed both a filling delay and late leakage of the optic disc.
- Subsequently, the optic disc developed pallor, and the retinal nerve fiber layer thickness decreased.
- These findings suggest that AION developed nearly simultaneously with VKH.

Bilateral disc edema in a patient with Vogt–Koyanagi–Harada disease

Can J Ophthalmol 2014;49:e52–e54

- In some patients serous RD is not remarkable, but optic disc swelling and mild retinal folds can be observed on fundus examination.



CLINICAL INVESTIGATION

Differences in the clinical features of two types of Vogt-Koyanagi-Harada disease: serous retinal detachment and optic disc swelling

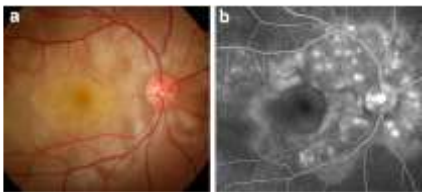
Yoko Ohnuki · Kinya Tsubota · Takeshi Kezuka · Hiroshi Goto

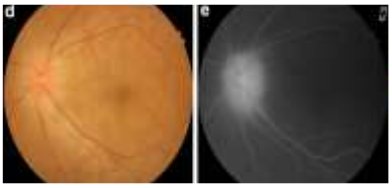
RD-type VKH disease

- Patients with clinically evident serous RD detected by OCT and FA with or without OD swelling.

OD swelling-type VKH disease.

- Patients with clinically evident OD hyperemia and swelling with no or minimal detectable serous RD on OCT



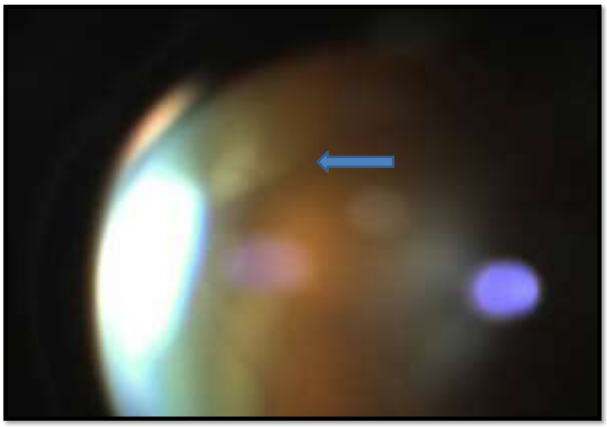


- A 31 year old female came complaining of bilateral sudden painless diminution of vision of 2 days duration.
- She said that she had a severe headache & blurring of vision 10 days before for which she sought medical advice.
- CT brain was done & Lumbar puncture.
- She was on cidamex tablets.

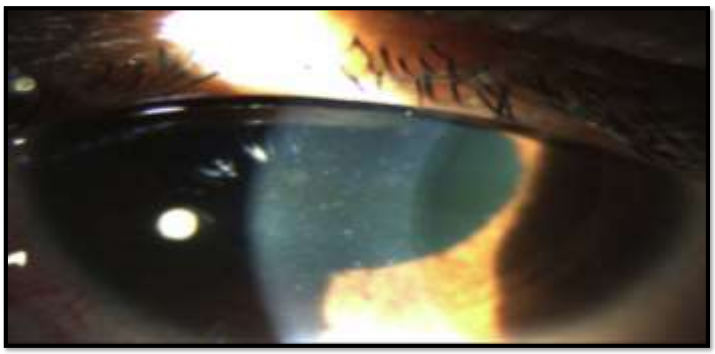
- Visual acuity
  - ✓ Rt eye PLBP
  - ✓ Lt eye HMGP
- Pupillary reaction
  - ✓ bilateral sluggish reactive

Fundus examination

- Showed bilateral disc swelling with total exudative RD & vitritis



Anterior segment



- The patient was given bilateral subtenon steroid injection.

- Medical treatment in the form of corticosteroids 60 mg per day

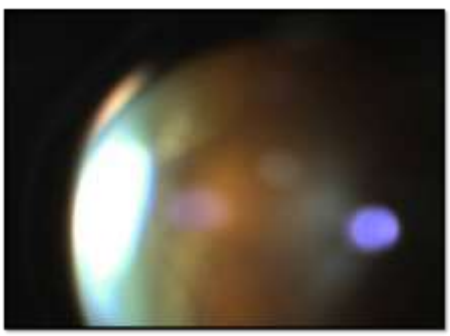
- Azathioprine

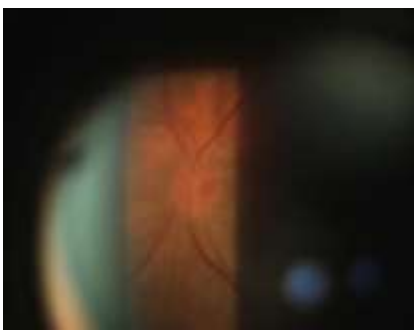
- 10 days after the treatment
  - ✓ Rt eye CF 80 cm
  - ✓ Lt eye 2/60

- One month after the treatment
  - ✓ Rt eye 6/36
  - ✓ Lt eye…… 6/24

Prognosis

Prognosis





Take home message

- Neurological symptoms are not rare in patients with uveitic syndromes.
- They can be used as a guide to diagnosis.
- Some of the findings are nonspecific, but others can be typical.

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thank you