HIKHA RANI PATEL
HITESH VERMA
KAPIL SIKKA
RAKESH KUMAR

Department of Otolaryngology Head and Neck surgery
All India Institute of Medical Sciences
New Delhi, India

Corresponding Author
Dr Hitesh Verma
Department of Otolaryngology Head and Neck surgery
All India Institute of Medical Sciences,
New Delhi, India

Email: drhitesh10@gmail.com

VOGT KOYANAGI HARADA DISEASE REMAINS UNDIAGNOSED

ABSTRACT

A thirty-five-year aged female presented repeatedly with the involvement of otoneurological, cutaneous and ophthalmologic systems. Detail haematological, biochemical, immunological and radiological workup were inclusive each time. Profound SNHL was noticed on audiology. The suspiciousness of Vogt Koyanagi Harada (VKH) disease was raised in otology and skull base clinic and it was confirmed after HLA evaluation.

Keywords : Antitubercular therapy, HRCT temporal bone, Human leukocyte antigen, Magnetic resonant imaging, Vogt-Koyanagi-Harada disease

INTRODUCTION

Vogt Koyanagi Harada (VKH) disease is a chronic, granulomatous condition associated with multisystem involvement [1]. The exact cause is still unclear, but the most accepted cause is the T-lymphocyte mediated autoimmunity affecting melanocyte. The usual treatment for VKH disease is high-dose corticosteroid therapy followed by a slow tapering of the drug over 3 – 6 months. Steroid intolerant and resistant cases can be treated with immunosuppressive drug therapy[2, 3]. Here, we are reporting an interesting case of suspected VKH disease with predominantly oto-neurological manifestations.

CASE PRESENTATION

A thirty-five-year aged female patient presented to us with history of right ear discharge for 8 years. The discharge was continuous, non-progressive, foul-smelling, occasionally blood-stained. She attended emergency with history of sudden onset of diplopia and blurring of vision in the right eye 6 years back. Tinnitus, episodic rotatory vertigo and severe headache were other associated symptoms. Vertigo lasted for 2-3 seconds almost every day and 3-4 times/day. Clinical examination showed a thick congested granular tympanic membrane with features of Gradenigo syndrome. The ophthalmological evaluation showed right eye papilledema. There was no relevant personal and family history. She underwent Pure Tone Audiogram, Magnetic Resonance Imaging (MRI) brain and inner ear and High Resolution Commuted Tomography (HRCT) temporal bone. HRCT temporal bone showed soft tissue density in tympanic cavity with sclerotic mastoid. Sinus and dural plate were intact (figure 1a&b). MRI showed hyper-intense signals from bilateral frontal and right parietal region with a filling defect in the right sigmoid sinus (figure 1c). MR finding was cross confirmed with MR venography and it also showed cerebral venous thrombosis with right sigmoid sinus thrombosis (figure1d). Audiometry showed profound Sensorineural hearing loss in the right ear with left side normal hearing. Autoimmune workup for all granulomatous diseases was negative. She was planned for mastoid exploration in view of mismatch clinical and radiological finding. Cortical mastoidectomy was performed and the intraoperative finding was unhealthy pale mucosa with pale granulation in mastoid cavity without erosion of sinus wall and patent sigmoid sinus. The intra-operative and postoperative period was uneventful. The postoperative histopathology report, CSF analysis, peripheral nerve conduction studies, haematological and autoimmune workup were disobliging. TB-PCR was negative for mycobacterium in CSF analysis. Anti-Tubercular Treatment was prescribed for 6 months in view of clinical suspiciousness, abnormal radiological finding and positive Monteux test. Right eye vision and 6th nerve palsy was improved with persistent disc pallor in follow-up period. Follow-up MRI also showed regained flow in the right sigmoid sinus. The patient had a recurrent episodic severe throbbing pain in the right ear in follow up period

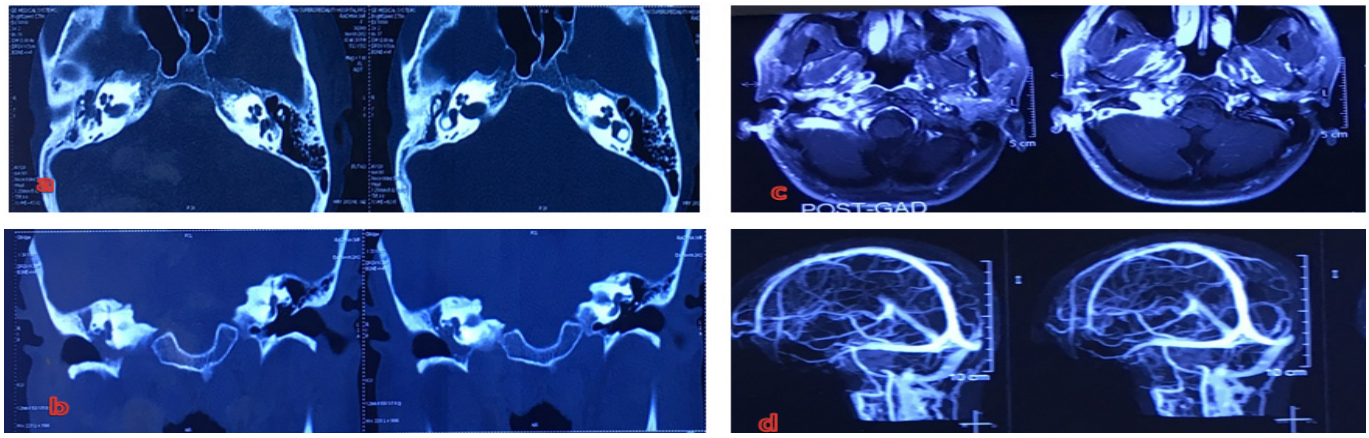

Fig I: Radiology of 2012. An (axial) and b (coronal) images of HRCT temporal bone is showing soft tissue density in right middle ear cleft with erosion of bony septa. MRI (c image) is showing the hyperintense signal from the right skull base region. MR angiogram (d image) is depicting obliterated right sigmoid sinus.

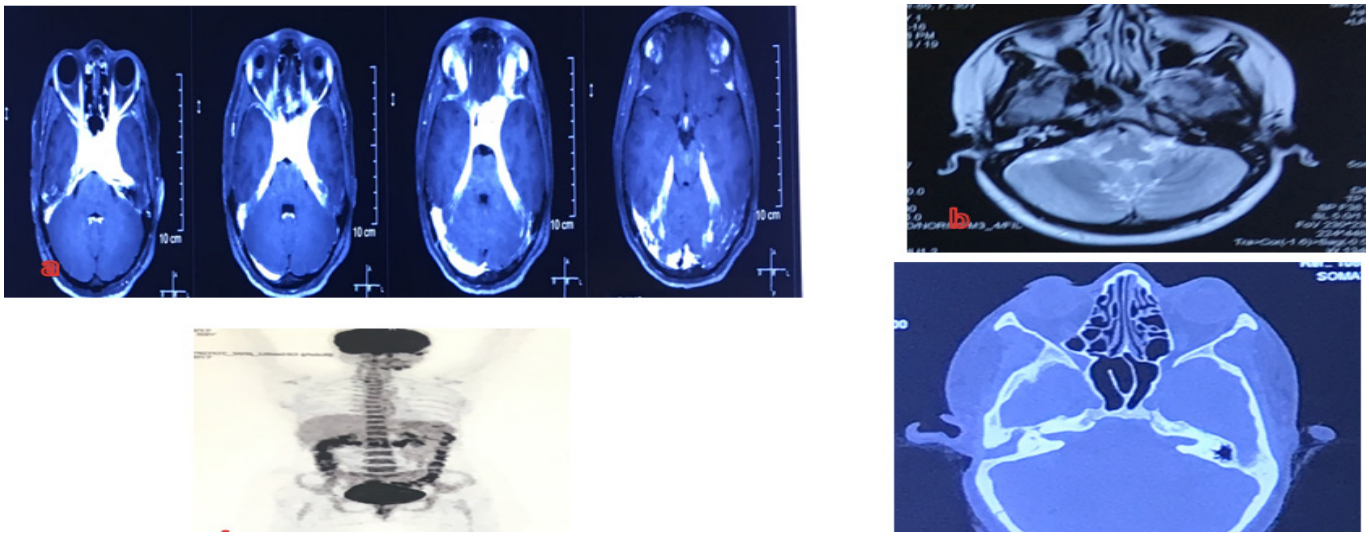

Fig II: Radiology of 2016. MRI (a& b image) showing enhancement of central skull base and right middle ear cleft. HRCT temporal bone (c image) is showing soft tissue density in right middle ear cleft without cortical bone. PET (image d) scan not shown any metabolic active lesion.

and it showed response to oral analgesics.

She presented with almost similar symptoms in 2016 December. MRI brain revealed diffuse patchy meningitis and enhancement in bilateral cavernous sinus, temporal lobe, the floor of the middle cranial fossa, anterior to clivus and posterior fossa. (figure 2 a&2b). Cavernous carotid on right side was narrower than opposite side. Distal transverse sinus and sigmoid sinus shows loss of flow void appears isointense on T1 and hyperintense on T2. She was transferred to the neurology department for further treatment. Ear examination showed a feature of granular myringitis with congestion. The clinical examination revealed right 3rd and 6th nerve palsy. Ophthalmology opinion obtained, which showed papilledema on fundus examination. HRCT temporal bone showed homogenous soft tissue density in the right mastoid (figure2c). HRCT chest and abdomen showed a calcified nodule in the mediastinum and calcified granuloma in the right lobe of liver. PET scan did not show any metabolic active lesion (figure 2d). Haematological, biochemical and immunological workup including CSF analysis were inclusive. On clinical suspiciousness and past response with ATT she was again prescribed ATT with steroid for 12months. The follow-up scan at 1 year showed pretreatment status. HRCT temporal bone in 2016 showed soft tissue density in the right tympanic cavity absent cortical bone due to previous surgery. MR scan in 2017 showed hyperintense signals in right side skull base region from the cavernous sinus and CP angle, petrous and orbital apex. She continued the same treatment for further 6 months. She

was symptomatically better but not completely improved. She was under the dermatology department for vitiligo, poliosis and alopecia for almost the same period.

Recent visit at audiology and skull base clinic, detail clinical evaluation and profile of patient raised the possibility of VKH disease. She was advised to get HLA evaluation. HLA- DRB1, HLA-DRB3/4/5typing was done and it showed the possibility of VKH syndrome. The patient is kept on regular follow up. The severity of pain and diplopia are reduced to a great extent.

DISCUSSION

VKH disease is cross-linked with numerous condition, so a diagnosis of it remains challenging. The sex predilection is 2:1 for female to male and age preponderance at 3rd to 5th decade of life [4]. The clinical manifestations are divided into 3 stages: acute, subacute and chronic stages. Ocular manifestation is the characteristic part of it whereas inner ear involvement accounts up to 75% of VKH disease[5]. The presence of autoimmune ear and eye symptom, VKH disease can be considered as differential diagnosis [6]. Vestibulocochlear neuritis leads to vertigo, nystagmus, and altered vestibulo-ocular reflex and sensorineural hearing loss. Hypoacusis and tinnitus are less common symptoms [7,8]. Kimura et al studied inner ear involvement in VKH disease and they were able to show clinical and laboratory alteration in their inner ear[9].

Ocular involvement can be confirmed with the number of testing methods but in our case, papilledema and disc pallor were the only findings. No specific laboratory test is available till now but HLA DRB1*0405 showed a well-defined association. Pleocytosis in CSF is one of the major criteria and it was against our case. American Uveitis Society proposed diagnostic criteria for VKH disease. They categorized it into complete, incomplete and probable type.

High dose systemic steroid therapy is the mainstay of treatment for Vogt Koyanagi Harada disease. The regimen is 1-1.5 mg/kg body weight with gradual tapering over several months (6months-1year). Patient with very severe disease should receive intravenous methylprednisolone for 3 days followed by oral prednisolone 1 mg/kg/day for several months. Patient resistant or intolerant to corticosteroid should receive immunosuppressive therapy.[10]

CONCLUSION

Since VKH disease is a very rare and no definitive tests are available to confirm its diagnosis, therefore, in our clinical practice its diagnosis cannot often be made confidently. The presence of otoneurological with eye and cutaneous lesions raises the possibility of Vogt-Koyanagi-Harada disease.

REFERENCES

1. Cardoso IH, Zajdenweber ME, Muccioli C, Fimamor LP, Belfort Jr R. Applicability of the 2001 revised diagnostic criteria in Brazilian Vogt-Koyanagi-Harada disease patients. Arq Bras Ophthalmol 2008;71(1):67-70.
2. Gocho K, Kondo I, Yamaki K. Identification of autoreactive T cells in Vogt-Koyanagi-Harada disease. Invest Ophthalmol Vis Sci 2001;42(9):2004-9.
3. Damico FM, Bezerra FT, Silva GC, Gasparin F, Yamamoto JH. New Insights into Vogt-Koyanagi-Harada Disease. Arq Bras Oftalmol 2009;72(3): 413-20.
4. Mota LA, Santos AB. Vogt-Koyanagi-Harada's syndrome and its multisystem involvement. Rev Assoc Med Bras 2010;56(5):590-5.
5. Yang HK, Park KH, Kim JS, Hwang JM. Bilateral disc oedema in a patient with Vogt–Koyanagi–Harada disease. Can J Ophthalmol 2014;49(2):54–6.
6. Kimura H, Ohashi N, Aso S, Watanabe Y. Clinical study of the role of melanocytes in the inner ear of patients with Harada's disease. ORL 1996;58(4):233-7.
7. Brito AE, Zagui RB, Rivitti EA, Nico MM. Você conhece esta síndrome?. An Bras Dermatol 2005;80(3):297-8.
8. Ohno S, Minakawas R, Matsuda H. Clinical studies of Vogt-Koyanagi-Harada's disease. Jpn J Ophthalmol 1988;32(3):334-43.
9. Ondrey FG, Moldestad E, Mastroianni MA, et al. Sensorineural hearing loss in Vogt-Koyanagi-Harada syndrome. Laryngoscope. 2006;116(10):1873-6.
10. Alam M, Iqbal M, Khan BS, Hussain I.Vogt Koyanagi Harada Disease: Treatment and Visual Prognosis. Jcpsp-J Coll Physici 2013;23(10):740-2.