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Idiopathic Isolated Unilateral Acquired Superior Oblique Palsy-A Rare Case Report.

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ABSTRACT
INTRODUCTION:
Superior oblique palsy is the most common isolated palsy of an extraocular muscle.In this case report we present a case of a male patient with idiopathic isolated unilateral superior oblique palsy.
CLINICAL DESCRIPTION:
A 55 yr old male presented with complaints of blurring of vision at far and near with painless,non-progressive intermittent vertical diplopia while looking downwards. There was no history of trauma,no other cranial nerve abnormalities. No medical illness in the past. On ophthalmic examination, the best corrected visual acuity in both eyes were 6/6.ocular position 10° exotropia noted in RE. Extraocular movements were full and free in both the eyes.On diplopia charting crossed vertical diplopia with maximum separation on the levodepression side. Park- Bielschowski's three step test suggestive of RE superior oblique palsy. Forced duction test revealed no mechanical restriction. Basic routine blood investigations and MRI brain and orbit were normal.
CONCLUSION:
Acquired unilateral superior oblique palsy in a patient without symptoms does not require any treatment. Idiopathic isolated unilateral SO palsy shows full recovery(78.8%)Spontaneously within 4-6 months. The Patient was reassured and advised occludable glasses to overcome diplopia and periodic follow-up.
KEYWORDS: *Superior oblique palsy,SO Palsy,Vertical Diplopia,Trochlear nerve,occludable glasses*

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I. Background

- Superior oblique palsy(SO PALSY) is the most common isolated palsy of an extraocular muscle[1] .Most frequent cause of vertical diplopia.Superior oblique palsy can be congenital or acquired, unilateral or bilateral.The most common cause of SO palsy is congenital(49%)[4].The acquired causes are primarily due to trauma(18%),hypertension(18%),coexist with diabetes(5%),diabetes alone(1%),intracranial neoplasms(1%),post-neurosurgery(3%),idiopathic/undetermined(1%)[4]

II. Case Presentation:

55 year old male presented with complaints of blurring of visionat far &near with painless,non progressive ,intermittent vertical diplopia while looking downwards.There was no history of trauma, fever, no associated neurological symptoms including no other cranial nerve abnormalities.No medical illness in the past
GENERAL EXAMINATION: Unremarkable and vitals - stable,PR-78 beats/min,BP-120/80mmHg.
SYSTEMIC EXAMINATION: Cvs-S_1S_2 heard,no murmurs,RS-B/L air entry equal,no added sounds,**P/A**-soft non- tender,no organomegaly,**CNS**-conscious, oriented to time, place and person,**Memory**-intact,speech-normal

	RIGHT	LEFT
Smell	Intact	Intact
Visual acuity	6/6	6/6
Colour vision	Normal	Normal
Field of vision	Normal	Normal

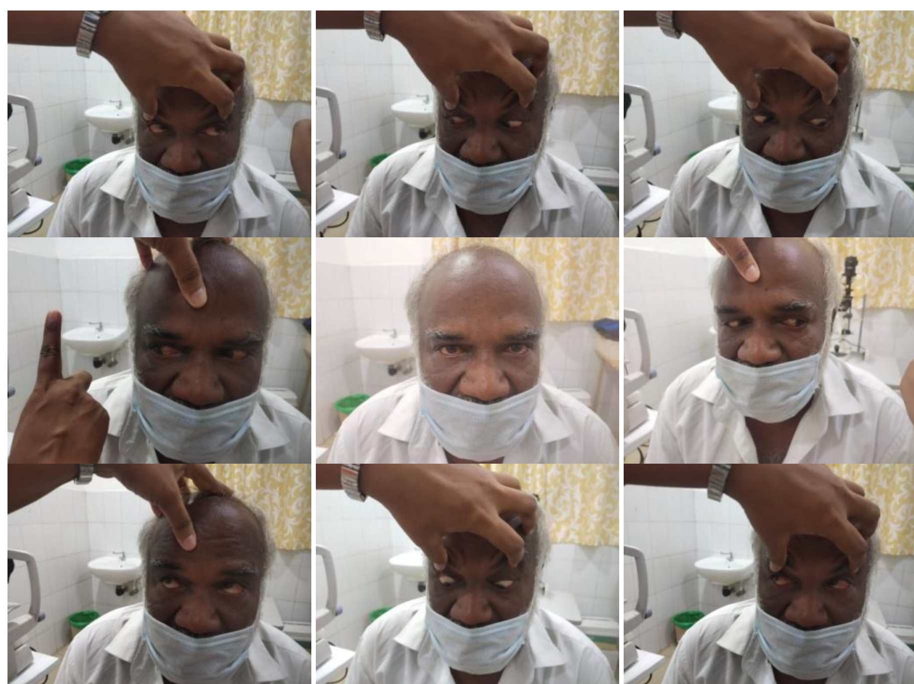
Extra ocular movements	Full &free	Full &free
Pupil size	3mm	3mm
Light reflex	Intact	Intact
Ptosis	Absent	Absent
Sensation over face	Intact	Intact
Nasolabial fold	Normal	Normal
Sensation over anterior 2/3rd of tongue	Intact	Intact
Rinne's test	AC>BC	
Weber'test	Not lateralized	
Palatal movement	Normal	Normal
Gag reflex	Absent	Absent
Wasting of tongue	Absent	Absent
Deviation of tongue	No deviation	No deviation

OCULAR EXAMINATION

Head posture-erect

Ocular position- RE-10°exotropia

Facial symmetry –symmetrical



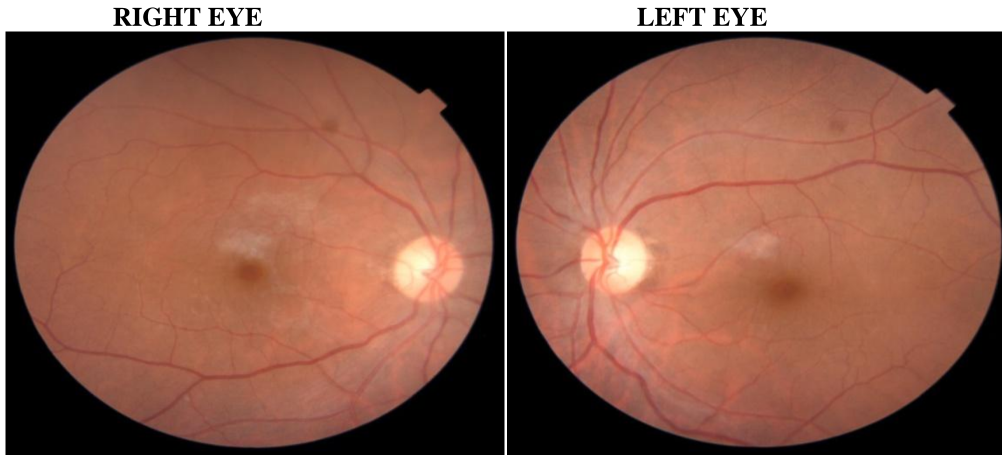
Extraocular movements full and free.

ANTERIOR SEGMENT EXAMINATION(SLIT LAMP):

	RIGHT EYE	**LEFT EYE**
Eyelids and adnexa	Normal	Normal
Conjunctiva	Normal	Normal
Cornea	Clear	Clear
Anterior chamber	Normal depth	Normal depth
Iris	Normal colour pattern	Normal colour pattern
Pupil	RR,reacting to light No RAPD	RR, reacting to light No RAPD
Lens	Clear	Clear

FUNDUS EXAMINATION WITH (90D LENS)

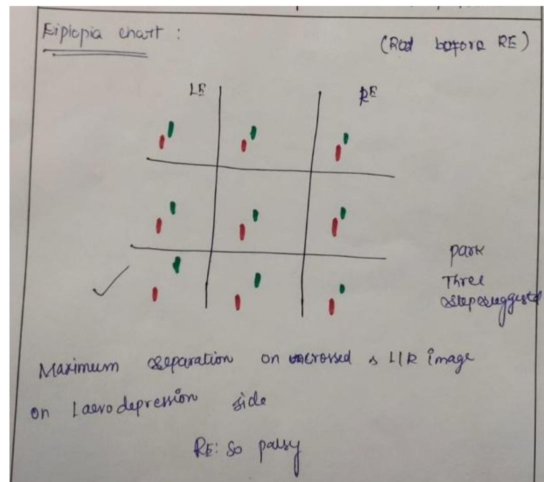
	RIGHT EYE	**LEFT EYE**
Media	Clear	Clear
Disc	Normal size&shape Well defined margin	Normal size&shape Well defined margin
CDR	0.3	0.3
AVR	2:3	2:3
macula	FR-present	FR-present
background	Normal	Normal



BE Fundus examination-normal study

DIPLOPIA CHARTING

Crossed diplopia and maximum separation on levodepression side



Park-Bielschowski's three step test
Suggestive of right superior oblique palsy
Forced duction test
Revealed no restriction of movements

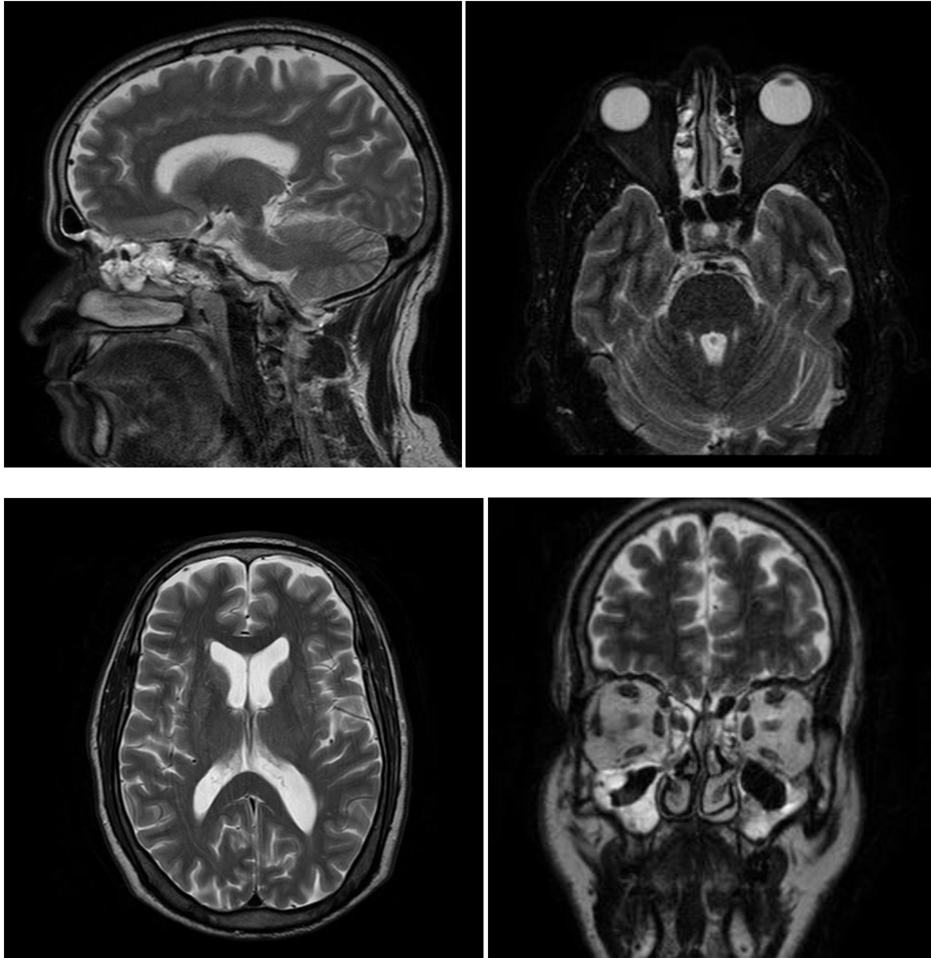
INVESTIGATIONS:

BLOOD HAEMOGRAM:

TESTS	**RESULTS**
Haemoglobin	14.6 gm/dl
Total WBC count	6,100cells/cumm
neutrophill	62%
lymphocyte	34%
Mixed cell	4%
ESR(1hr)	18mm/hr

Glucose random	128
Blood urea	15mg/dl
Serum creatinine	0.9mg/dl

IMAGING STUDIES:
MRI ORBIT-NORMAL,MRI BRAIN PLAIN-NORMAL,MR CEREBRAL ANGIOGRAPHY ,VENOGRAM – NORMAL



DIAGNOSIS

Hence we diagnosed asIDIOPATHIC ISOLATED UNILATERAL ACQUIRED SUPERIOR OBLIQUE PALSY

TREATMENT

- Observation
- First followup visit-patient returned with same complaints
- Patient treated symptomatically with occludable glasses
- Second follow-up visit reported great improvement.
- Adviced to continue occludable glasses and regular followup.

III. Discussion

Superior oblique(SO) muscle is supplied by trochlear nerve(IVth cranial nerve) and it is the only cranial nerve that arises from dorsal aspect of brain.[1 2].IVth cranial nerve has longest intracranial course and it has few axons thanother cranial nerves, making it slender and more vulnerable to trauma [3].Nuclear lesions cause contralateral superior oblique palsy,Peripheral lesions cause ipsilateral SO palsy[1].The most common cause of isolated SOpalsy is congenital,mostly bilateral in nature contributing to 49% and majority are present in adulthood& identified by patient old photograph and onset of diplopia.[2]Trauma is the most common acquired cause of bilateral IVth nerve palsy, because of its longest intracranial course. It can be due to direct trauma to head or secondary to fall or traffic accidents.[2]Second most common acquired cause is vascular (hypertension

coexistent with diabetes or diabetes alone)and hypertension is more frequent than diabetes.[2]Other etiology of acquired causes are compressive brain lesions(Aneurysms, intracranial tumours) but they affect multiple cranial nerves simultaneously.[1 2]None of the above causes are defined in idiopathic/undertermined etiology.In this present case absence of trauma history,painless nature of SO palsy with normal blood investigations, the inflammatory and vascular causes are excluded.The possibility of compressive lesion is excluded by normal MRI-Orbit/Brain study.Hence etiology is not determined by above mentioned causes it is considered as idiopathic or undetermined cause and frequent follow up is needed because vascular causeshould be considered as one of the differential diagnosis in these age group of patients.Previous studies have shown complete recovery in vascular causes(91.9%) and partial recovery in traumatic and brain lesions.

IV. Conclusion:

Prognosis and natural course varied depending on etiology.The overall rate of complete recovery from acute cranial nerve palsy was 78.8%.[5]In case of undeterminedcause close Observation with symptomatic treatment and frequent follow-up is required.

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