

Etiological and Prognostic Factors of Acquired Sixth Cranial Nerve Palsy

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Abstract: Introduction: CN6 palsy has been reported to be the most common ocular motor nerve palsy. It has vascular or ischemic and idiopathic etiologies. Its recovery rate is good compared to other ocular motor nerve palsies. Careful history taking and clinical evaluation are as important as imaging evaluation in CN6 palsy. Aim: This study aimed to determine etiology of sixth cranial nerve palsy and its effects on prognosis. Material and Methods: A hospital based prospective study was done on 52 patients who presented with acquired abducens nerve palsy at a tertiary care centre for a duration of 1 year. Results: Mean age was 47 years. Mean duration of recovery was 70 days. Vascular cause contributed to 50% cases, 21% were idiopathic, 17% were due to trauma and 12% were due to neoplasm. Rate of recovery was 79%. Neoplastic cases were least to recover. Conclusion: Most common cause of sixth cranial nerve palsy was vascular (46%), followed by idiopathic (21%), trauma (17%), neoplasm (12%) and other causes (4%). Prognosis was best for idiopathic and worst for neoplastic cause.

Keywords: Sixth cranial nerve, palsy, etiology, ocular motor nerve

1. Introduction

CN6 palsy has been reported to be the most common ocular motor nerve palsy.^[1-3] It has vascular or ischemic and idiopathic etiologies.^[2-5,6,7] However, acute cranial nerve palsy may be an early sign of serious intracranial lesion, warranting careful assessments including neuroimaging. The recovery rate of CN6 palsy is about 60% to 80%, and overall its recovery rate is good compared to other ocular motor nerve palsies.^[3,5] In clinical practice, CN6 palsy is more frequently diagnosed in younger patients than before.^[3,5,8] Therefore, careful medical history taking and clinical evaluation are as important as imaging evaluation in CN6 palsy.^[9,10,11]

2. Aims and objectives

To determine etiology of sixth cranial nerve palsy and its effects on prognosis.

3. Material and Methods

Study design: Hospital based prospective study.

Study population: 52 patients who presented with acquired abducens nerve palsy at a tertiary care centre

Study duration: April 2022 and March 2023

History of present illness, history of trauma and systemic disease if any were noted.

Relevant blood investigations and MRI was done.

They were followed up for 3 months.

Etiology and rate of recovery was noted.

4. Results

Total Number of Patients – 52 (males=28, females=24)

Recovered- 79% (n = 41)

Not Recovered- 21% (n = 11)

Rate of Recovery– 79%

Mean Duration of Recovery – 70 days (10 weeks)

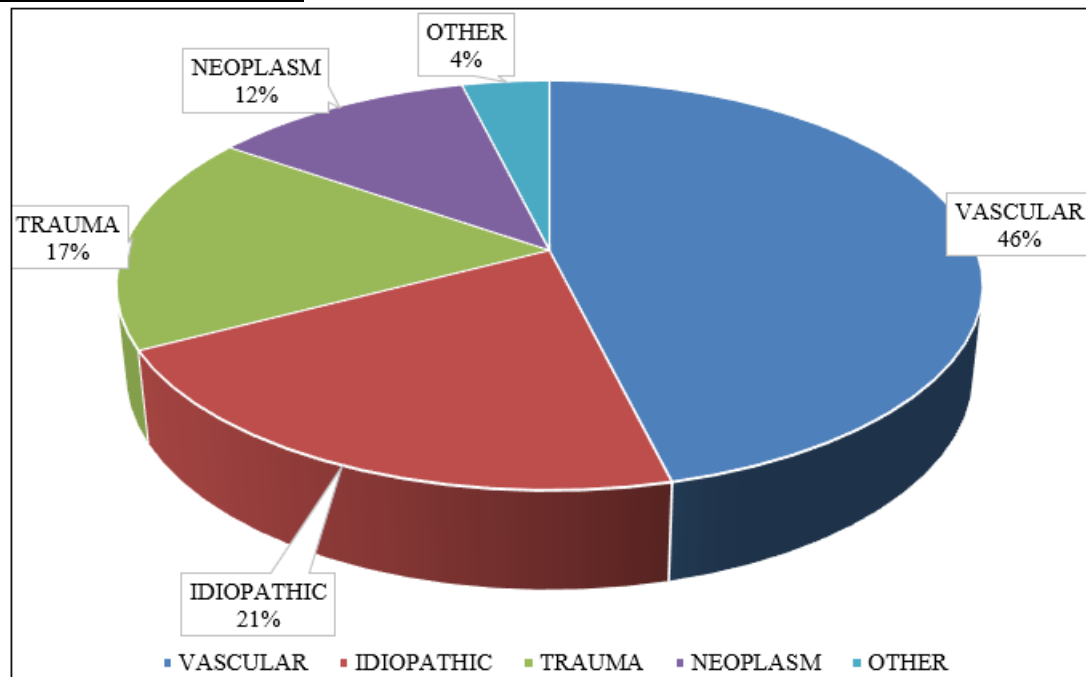
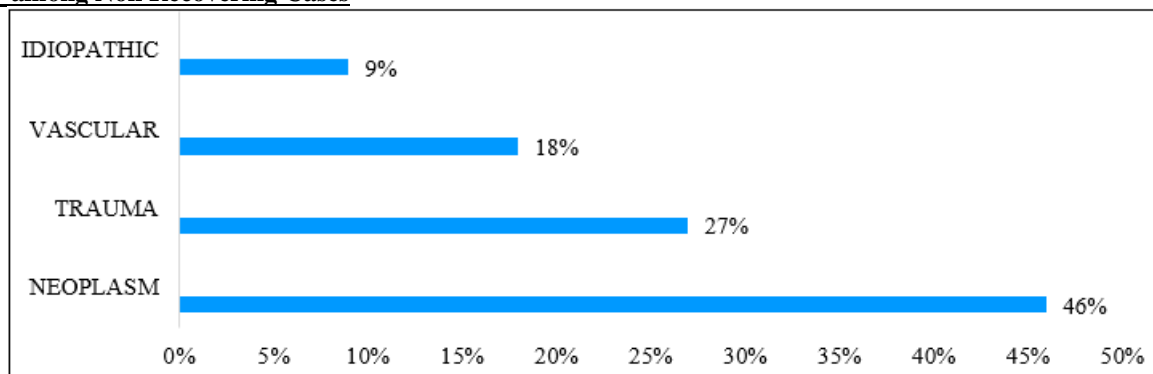
Mean Age– 47 years

Etiology of Sixth Cranial Nerve Palsy

Cause	Number of Patients	Percentage
Vascular	24	46%
Idiopathic	11	21%
Trauma	9	17%
Neoplasm	6	12%
Other	2	4%
Total	52	

Etiology among Non Recovering Cases

Cause	Number of Non Recovered Cases	Percentage
Neoplasm	5	46%
Trauma	3	27%
Vascular	2	18%
Idiopathic	1	9%
Total	11	

Etiology of Sixth Cranial Nerve Palsy**Etiology among Non Recovering Cases****5. Discussion**

Elder et al^[1] have reported that microvascular disease is the most frequent cause of acquired CN6 palsy in patients over 50 years of age.

Park et al,^[3] Jung et al,^[4] and Peter et al^[12] have reported that 28% to 56% of patients with CN6 palsy have a vascular cause and 24% to 27% of them have an unknown origin.

In our study vascular cause contributed to 46% cases of CN6 palsy, similar to previous studies.

Sanders et al. reported that 51 of 59 patients (86%) experienced resolution of CN6 palsy, and only 3 patients required strabismus surgery.^[13]

In this study rate of recovery was 79%.

Jung et al ^[14] reported that recovery period was 7 weeks in isolated ischaemic CN6 palsy.

In this study period of recovery was found to be 10 weeks.

6. Conclusion

Most common cause of sixth cranial nerve palsy was vascular (46%), followed by idiopathic (21%), trauma (17%), neoplasm (12%) and other causes (4%).

Prognosis was best for idiopathic and worst for neoplastic cause.

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