

Hemiparkinsonism an Experience of 4 Years at CMH Rawalpindi

JUNAID KHAN¹, FARRUKH SHER², ANISA KALSOOM³

ABSTRACT

Objective: To evaluate/ analyse the importance of potentially curable intracranial surgical lesions.

Place and duration of study: Neurosurgical centre CMH RWP July 2002 to July 2006

Study design: Case control study.

Patients and methods: Patients were selected by non probability convenient sampling from neurosurgical OPD. All patients with unilateral movement disorders were included. They were examined clinically and CT scan head was done in all patients.

Results: Total number of 8 patients with hemiparkinsonism were observed during the study period. All were males and four had sphenoid wing meningiomas while other four had chronic subdural hematomas. All the patients were operated. Complication rate was nil except one patient with sphenoid wing meningioma developed subdural hygroma on the operated side. All were free of hemiparkinsonism post operatively.

Conclusion: One must resort to neuroimaging in cases of hemiparkinsonism in order to identify and treat potentially curable intracranial pathology.

Key words: Hemiparkinsonism, Intracranial curable surgical lesion, Radiology.

INTRODUCTION

Intracranial neoplasms are an uncommon cause of symptomatic parkinsonism and rest tremors. There is an incidence of 0.3% in prospective analysis of 907 patients with supratentorial tumours by J.K. Krauss et al¹.

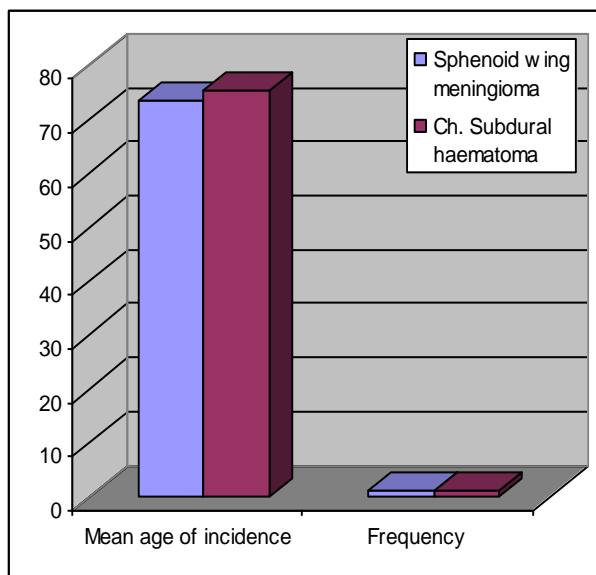
PATIENTS AND METHODS

A total number of 336 patients with brain tumors, both intra axial and extra axial, including metastasis and posterior fossa tumors were analyzed during this period, and 4 were found to have hemi parkinsonism. 362 patients with chronic subdural hematoma were analysed and 4 were found to have features of hemiparkinsonism. All patients with brain tumors were diagnosed with CT Scan Head (plain) and with contrast, whereas, in patients with chronic subdural hematoma, only plain CT scan Head was advised. All these patients were clinically examined for features of hemiparkinsonism especially rest-tremors, hemi hyper reflexia, festinating gait and masked facies. These features were recorded on the Specialist's Referral Form. The patients were followed post operatively fortnightly for initial 2 months, during which the antiparkinsonian drugs were gradually

tapered off and at the same time the hemiparkinsonian features were recorded clinically and compared with the pre operative clinical status.

RESULTS

All patients were males and above 60 years of age (mean age=73.5 and 75.5, respectively). A total of 8 were found to have features of hemiparkinsonism with a frequency as shown in Fig 1. 2 patients had sphenoid wing meningiomas and 2 had chronic subdural hematomas.



1. Classified Neurosurgeon, Combined Military Hospital, Peshawar.

2. Graded Medical Specialist, Combined Military Hospital, Kohat

3. Classified Radiologist, Fauji Foundation Hospital Rawalpindi

Correspondence to Dr. Junaid Khan, E-mail: junaidneuro@hotmail.com

Duration of hemiparkinsonism in patients with sphenoid wing meningiomas was more than 3 years and was on antiparkinsonian drugs for 3 years. Duration of hemiparkinsonism in patients with chronic subdural hematoma was less than 3 months and they were also on antiparkinsonian drugs for 2 months. Both the groups had poor control with antiparkinsonian drugs. Gross total excision was done for sphenoid wing meningiomas and multiple burr hole evacuation for chronic subdural hematomas. One patient with sphenoid wing meningioma developed subdural hygroma on the operated site which was treated conservatively. Imaging analysis revealed mechanical compression of basal ganglia in all patients with profound perilesional oedema. All the patients were weaned off the antiparkinsonian drugs in 4-6 weeks time and they were completely free of hemiparkinsonian features by 6 weeks post operatively.

DISCUSSION

Sphenoid wing meningiomas constitute 20% of all meningiomas and usually presents with features of raised intracranial pressure, convulsions, diminished vision and ocular features². The presentation in our patients was primarily unilateral rest tremors. Hemiparkinsonism as sole feature is extremely rare^{3,4,5}. Although movement disorders in various intrinsic and extrinsic tumours and intracranial hematomas have been reported and can be unilateral or bilateral^{6,7,8,9,10}. Direct mechanical compression and or torsion of basal ganglia, impairment of blood flow to subthalamic nuclei and perilesional oedema may cause movement disorders as found in our cases on CT scans¹¹ (fig 2). Both the tumours in our cases were sphenoid wing meningiomas as described in international case reports. PET scanning with 2 fluoro deoxyribose can be done to confirm blood flow impairment and glucose metabolism but we didn't go for PET scanning as there were clear cut surgical targets on CT scan.¹² Total excision of the tumours plus drainage of hematomas was done which resulted in amelioration of symptoms of parkinsonism. There was no recurrence of symptoms on long term follow up but relapse of symptoms can occur with recurrence of tumour¹³.

CONCLUSION

Cerebral tumour/chronic subdural hematomas are uncommon cause of parkinsonism. Symptoms

probably occur due to compression and distortion of the basal ganglia and nigrostriatal pathways. Diagnosis of the underlying pathology can be delayed by this presentation. Since complete recovery is possible so patients with atypical symptoms, poor response to dopaminergic drugs, and focal neurological signs should undergo neuroimaging.

REFERENCES

1. J. K. Krauss, Th Paduch, F. Munding and W. Seeger. Parkinsonism and rest tremor secondary to supratentorial tumours sparing the basal ganglia. *Acta Neurochirurgica*, volume 133, numbers 1-2/March; 1995.
2. Shah KC, Rajshekhar V, Sphenoid wing meningioma presenting as hemiparkinsonism: case report. *Neurol India*. 2004 Mar; 52(1): 133.
3. Yadav YR, Singh M, Raina VK. Sphenoid wing meningioma presenting as movement disorder. *Neurol India* 2002; 50: 229-30.
4. Chand DC, Lin JJ, Lin JC. *Zhonghua Yi Xue Za Zhi*. Parkinsonism as initial manifestation of brain tumours. 2000 Aug; 63(8): 658-62.
5. Adhiyaman V, Meara J. Meningioma presenting as bilateral parkinsonism. *Age Ageing*. 2003 Jul; 32(4): 456-8.
6. Lu CS, Chang CN. Hemiparkinsonism in a patient with frontal meningioma. *J Formos Med Assoc*. 1992 Dec; 91(12): 1216-8
7. Saleem SM, Shah S, Kirmani A, Dhobi GN. An unusual case of Parkinsonism secondary to right parasagittal meningioma. *Neurol India*. 2000 Jun; 48(2): 190-1.
8. Sandyk R, Kahn I: Parkinsonism due to subdural hematoma. Case report. *J Neurosurg* 1983;58:298-299
9. Lin Juei-Jueng, Chang Dar-Cheng: tremor caused by ipsilateral chronic subdural hematoma. *J Neurosurg* 1997; 87:474.
10. Bhatnagar HS. Movement disorders caused by brain tumours. *Neurol India* 1999 March; 47(1): 40-2.
11. Miyagi, Yasushi M.D.; Morioka, Takato M.D.; Otsuka, Makoto M.d.; et al. Striatal glucose metabolism and [18f] fluorodopa uptake in a patient with tumor-induced hemiparkinsonism. *Neurosurgery*, 1993 May; 32(5): 838-41.
12. Bostantjopoulou S, Katsarou Za, Petridis A. Relapsing hemiparkinsonism due to recurrent meningioma. *Parkinsonism Relat Disord*. 2006 Oct 14; [Epub ahead of print].
13. Salvati M, Frati A, Ferrari P, Verrelli C, Artizzu S, Letizia C. Parkinsonian syndrome in a patient with a parietal meningioma: case report and review of the literature. *Clin Neurol Neurosurg*. 2000 Dec; 102(4): 243-5.