

Visual Prognosis in Papillitis



MEDICAL SCIENCE

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ABSTRACT

Aim: To study the prevalence of papillitis in different age groups and visual outcome following treatment of Injection Methyl Prednisolone.

Materials & methods: This study included 50 cases of papillitis, visiting the hospital from 2007-2009. Patients diagnosed with papillitis were included in the study while that of retro bulbar neuritis were excluded. All the patients were given Injection Methyl Prednisolone (1gm) intravenously for 3 consecutive days followed by oral Prednisolone for 11 days with rapid tapering of the drug over one week. Follow up was done every 15 days for a period of two months.

Results: In this study 60% cases were females. Majority 34% cases occurred in the age group of 31-40 years. 30% patients showed improvement in visual acuity after first dose of injection Methyl Prednisolone while 87.5% cases showed improvement after three doses.

Conclusion: Papillitis is more common in females and age group of 31-40 years. Treatment with Injection Methyl Prednisolone can improve vision in cases of Papillitis.

Introduction

Papillitis is defined as inflammation of optic nerve head. Optic neuritis is defined as the inflammation of the optic nerve^{1, 2}. It is one of the causes of acute loss of vision associated with pain. Optic neuritis can be the initial episode for a patient who will subsequently develop multiple sclerosis. The diagnosis of optic neuritis is usually made clinically. MRI Brain yields prognostic information in terms of patient's future risk for development of multiple sclerosis.

The inflammation of optic nerve is mainly due to demyelination and can be idiopathic, isolated or due to infection. However this disease has a very strong association with multiple sclerosis. 15 - 20% of cases of multiple sclerosis manifest as optic neuritis, and 38 - 50% patients with multiple sclerosis develop optic neuritis at some point during their course of disease. The risk of developing multiple sclerosis after an episode of isolated optic neuritis is about 30% at 5 year follow up and 38% at 10yr follow up.

Nettleship (1884) first described a syndrome characterized by "failure of sight limited to one eye, often

accompanied by neuralgic pain around the temple & orbit & by pain in moving the eyes, many recovered but permanent damage & even total damage may ensue. There is at first little, sometimes no disc changes, but it often becomes more or less atrophic in few weeks¹." He also pointed out tendency for pain to antedate visual failure and for maximal visual field defect to be central.

Clifford Allbutt (1870) was first to draw the occurrence of a '*sympathetic disorder* of eye in association with acute myelitis and Erb (1879) was first to provide a full clinical description of clinical entity of acute bilateral optic neuritis & acute myelitis for which Devic (1894) suggested the name '*neuromyelitis optic*'.

The association between optic neuritis and multiple sclerosis was first noted by Charcot (1872). Thereafter its frequency was generally recognized by Uhthoff (1889) & Marcus Gun (1897), who attributed 50 - 60% of their cases of retro bulbar neuritis to multiple sclerosis.

The aim of this study as to study the prevalence of papillitis in different age groups and also the visual outcome of papillitis following the treatment with Injection Methyl Prednisolone.

Materials & methods

The study was conducted by reviewing case reports of patients with diagnosis of papillitis of diverse etiology. The period of the study was from 2007-2009.

A study of 50 cases of papillitis was performed with a mean follow up of 60 days. All patients were examined for Snellen's visual acuity, pupillary reaction, and fundus examination (by direct and indirect ophthalmoscope), slit lamp examination and colour vision.

Inclusion criteria

Patients with sudden onset diminution of vision with / without eye pain, associated with Marcus Gunn pupil and an edematous optic disc along with abnormal colour vision.

Exclusion criteria

- Patients with diminution of vision not involving optic disc on fundus examination i.e. retro bulbar neuritis.

All the patients were given Injection Methyl Prednisolone (1gm) intravenously for 3 consecutive days followed by oral Prednisolone for 11 days with rapid tapering of the drug over next 1 week. All the patients were admitted in the hospital during the treatment and were discharged on the 4th day that is after receiving Injection Methyl Prednisolone for 3 days.

Routine blood investigations and MRI (Magnetic Resonance and Imaging) Brain with orbits was done for all patients on admission.

Follow up after discharge was done every 15 days for a period of 2 months.

Results:

Out of the 50 cases that were included in this study, papillitis was seen in 30(60%) female patients and 20(40%) male patients. (Table-1)

The maximum number of patients were in the age group of 31-

40 years that is 17(34%). There were 9 cases (18%) each in the age group of 11-20 and 21-30 years. There was only one case (2%) in the age group of >60 years. (Table-2)

To study the outcome of visual acuity, the cases were divided into two age groups, the first being ≥ 12 years and the second ≤ 12 years of age. There were 47 cases in the first group and 3 cases in the second group. It was seen that in the first group (≥ 12 years), 45.7% of cases had visual acuity in the range of finger counting at presentation, Hand movements close to face vision was present in 10.6% cases while 8.5% had visual acuity of No Perception of light at presentation. However after treatment 72.2% of the cases had visual acuity > 6/24, while only 27.8% had visual acuity < 6/24, 4.3% of eyes retained their original visual activity of No Perception Light vision. (Table-3)

Out of the three cases below 12 years of age, pretreatment visual acuity in one case was 6/60 and finger counting up to one meter in two cases (33.33% and 66.67% respectively) which improved to 6/12 & 6/18 vision after the treatment. (Table-4)

In the present study it was evident that 30% of cases started showing signs of visual recovery with the first dose of methylprednisolone and 87.5% patients showed improvement in visual activity after 3 doses of methylprednisolone. (Table5)

Discussion

In the present study, there were 50 cases of Papillitis during the period 2007-2009.

In this study (Table 1 and 2) 60% of the cases were females and majority 34% of the cases occurred in the age group of 31 -40 yrs. In comparison Alan K Percy et al studied 92 cases between 1935 and 1964, found that the highest incidence was in the age group of 20 - 39 years and the median age of onset was 31yrs. Papillitis occurred rarely after the age of 50yrs. They also noted a female preponderance in the ratio of 1.7:1.0. Similar study was conducted by Joseph F. Rizzo et al, which included 81 Patients, found the mean age was 33yrs with female preponderance in ratio of 2.7 :14

Similar observations were made by the optic nerve study group in the optic neuritis treatment trial involving 448 patients where the mean age was found to be 31.8 years and 77.2% were females.

In the present study (Table 3 and 4) 45.7% of cases had visual acuity in the range of finger counting at the time of presentation of the disease, however after treatment 72.2% of cases had visual acuity of > 6/24. In comparison, the Optic Neuritis Treatment Trial (ONTT) showed that equal proportion of patients suffered mild visual loss (35.3%) with visual acuity of 20/40 or better, moderate (28.8%) with visual acuity of 20/50 to 20 /190 and severe (35.9%) with visual acuity of 20/200 or worse, at the onset of disease. Similar result was found in the Optic Neuritis Treatment Trial which showed that Injection Methyl Prednisolone followed by oral Prednisolone speeds the recovery of visual loss but there was no significant difference in visual acuity comparing the 3 groups at 6 months.

Similar result was noted by Beck. R. W. et al. where 94% of cases had visual acuity > 6/12 at 1 year. He concluded that visual benefit in optic neuritis with treatment of injection Methyl Prednisolone followed by oral Prednisolone was short term limited to accelerated rate of recovery.

In this study (Table 5) 30% patients showed improvement in visual acuity after 1st dose of injection Methyl Prednisolone, while 87.5% cases showed improvement in visual acuity within 3 doses. This corresponds to the study done by Beck et al that Me-

thyl Prednisolone leads to accelerated rate of recovery in cases of optic neuritis.

Summary & Conclusion

A study of 50 cases of Papillitis was done over the period of 2½ years from 2007 – 2009. All the patients were treated with injection Methyl prednisolone 1 gm/ intravenously for 3 doses followed by oral Prednisolone 1mg / kg / day for 11 days. From the above study, the following conclusions were made:

Papillitis is more common in females (60%).

Papillitis more commonly occurred in the age group of 31-40 years (34%)

45.7% with Papillitis in adults had visual acuity in the range of finger counting one meter at the time of presentation of the disease. However, following the treatment, 72.2% of the cases had visual acuity of > 6/24 during the mean follow up period of 8 weeks. Visual acuity in 2 cases (4%) did not improve even after treatment.

Table 1:- Sex Distribution

Sex	Frequency	Percentage (%)
Male	20	40.0
Female	30	60.0
Total	50	100.0

Table 2:- Age Distribution:

Age In years	Frequency	Percentage (%)
1-10	3	6.0
11-20	9	18.0
21-30	9	18.0
31-40	17	34.0
41-50	8	16.0
51-60	3	6.0
>60	1	2.0
Tot	50	100.0

**Table 3: Correlation of visual acuity in adults (> 12 years) before & after treatment
Total no. of cases: 47**

VISION	PRE-TREATMENT		POST-TREATMENT	
	COUNT	Percentage (%)	COUNT	Percentage (%)
6/6			5	10.6
6/9			7	14.9
6/12			6	12.8
6/18			11	23.4
6/24			6	12.8
6/36	2	4.3	3	6.4
6/60	14	29.8	4	8.5
FC2m	7	14.9	1	2.1
FC1m	11	23.4	1	2.1
FC1/4m	4	8.5		
Hand movement closeto face(HMCF)	5	10.6	1	2.1
No PL	4	8.5	2	4.3
Total	47	100	47	100

Table 4: Correlation of visual acuity in children (< 12 years), before & after treatment:

Total no. of cases: 3

VISION	PRE-TREATMENT		POST-TREATMENT	
	COUNT	Percentage (%)	COUNT	Percentage (%)
6/6	-	-	-	-
6/9	-	-	-	-
6/12	-	-	1	33.33
6/18	-	-	2	66.67
6/24	-	-	-	-
6/36	-	-	-	-
6/60	1	33.33	-	-
FC2m	-	-	-	-
FC1m	2	66.67	-	-
FC1/4m	-	-	-	-
hmcf	-	-	-	-
No PL	-	-	-	-
Total	3	100	3	100

Table 5: Improvement in visual acuity correlated with number of doses of methyl prednisolone:

Inj.Methyl Prednisolone	Cases	Percentage (%)
Dose 1	15	30
Dose 2	18	35
Dose 3	11	22.5

ABBREVIATIONS:

hmcf: HAND MOVEMENTS CLOSE TO FACE

NO PL : NO PERCEPTION OF LIGHT.

REFERENCE

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