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Original Research Article

A study on etiological, radiological and clinical profile of patients with non traumatic myelopathies in a tertiary care hospital

Dr. Hemamalini G[1], Dr.Mohan D kashinkunti[2]
[1]Assistant professor, [2]Professor, Dept. of medicine, SDM medical college, Dharwad, Karnataka, India

***Corresponding author**
Dr. Hemamalini G
Email: hemag972@gmail.com

Abstract: The main objective of this study aims to identify etiological, radiological and clinical profile of patients presenting with non traumatic myelopathies. 50 patients of no traumatic myelopathy were prospectively studied from November 2014 to November 2015 in different wards of sdm medical college. Patients underwent detailed clinical evaluation followed by laboratory investigations including neuro imaging studies. In results the among 50 patients of non traumatic myelopathy age group ranged from 14-70 yrs with mean age of 43 yrs. 18 patients presented with quadriparesis and 36 patients presented with paraperesis. Tumours constituted most common etiology for compressive myelopathy (20%) followed by tuberculosis spine (18%). Acute transverse myelitis constituted common cause for non compressive myelopathy (16%).
Keywords:traumatic myelopathy, tuberculosis spine, transverse myelitis

INTRODUCTION

Paraplegia and quadriplegia resulting from non traumatic myelopathy is a disabling neurological disease. Clinical presentation of spinal cord disease is variable. Myelopathies affects not only motor, sensory and autonomic system, but also has various psycho social sequels [1]. Non compressive myelopathies encompasses large range of disease entities ranging from demyelination, nutritional, toxic to degenerative diseases. The disease spectrum in our country is different compared to western countries where infections and nutritional causes are less common. Onset may be acute, subacute or chronic. But it is important to diagnose as early as possible to prevent permanent disability [2]. Arriving at a diagnosis only with clinical examination and history may be difficult but with advent of MRI, a sensitive modality for lesions of spinal cord, yield for positive diagnosis has greatly increased. The incidence of non traumatic spinal cord lesions is difficult to determine because of infrequent reporting, but it is estimated to be equal to traumatic spinal cord injury. Spinal tumours, potts spine have been reported as the most common etiology of non traumatic spinal cord lesions [2, 3, 4].

AIMS AND OBJECTIVES

To identify clinical, radiological and etiological profile of patients with non traumatic myelopathies in a tertiary care hospital.

METHODOLOGY

This is a prospective study conducted during the period of 2014 to 2015 .study included a standardized proforma and detailed neurological examination.

Study population consisted of 50 patients admitted with myelopathies, in which history of trauma was excluded. Patients were clinically evaluated and relevant biochemical investigations and appropriate neuroimaging studies were done. Those within 7 days were considered acute, less than 4 weeks considered subacute and more than 4 weeks as chronic. MRI was done in all cases. CSF analysis was done to rule out secondary causes. Cases were classified as complete/ incomplete myelopathyand latter into compressive / non compressive myelopathy.

Criteria for acute transverse myelitis as follows-

1) Acutely or subacutely developing motor, sensory and sphincteric disturbance.
2) Sensory level
3) No clinical or laboratory evidence of spinal cord compression.
4) Absence of other neurological illness
5) Lack of progression over 4 weeks.

Statistical analysis

This study used mean and median as measures of central tendency. Data analysis was done with the help of SPSS Software and Sigma stat 3.5 versions.

RESULTS

Table 1: Sex distribution in study population

Sex	Cases	
	No	%
Male	25	50
Female	25	50
Total	50	100

Study consisted of 50 patients with males and females being equally affected (Table-1).

Table 2: Age distribution in study population

Age group	Cases	
	Number	%
Upto 20yrs	3	6
21-30yrs	8	16
31-40yrs	9	18
41-50yrs	13	24
51-60yrs	10	20
61-70yrs	7	14
Total	**50**	**100**
Mean	43.32	

In our study youngest patient was a 14 year old girl and oldest patient was a 64 year old male. 17 cases (34%) had age more than 50 years. Mean age group was 43 years(Table-2).

Table 3: Clinical presentation

Clinical presentation	Cases	
	Number	%
Quadriparesis	18	36
Paraparesis	32	64
Total	50	100

In our study group 64% of patients presented with paraparesis and 36% of patients presented with quadriparesis(Table-3).

Table 4: Onset of illness

Onset	Cases	
	Number	%
Acute	11	22
Subacute	26	52
Chronic	13	26
Total	**50**	**100**

In our study 52% of the cases presented with sub acute onset of weakness , followed by 22% with acute and 26% with insidious onset(Table-4).

Table 5:Clinical types

Clinical types	Cases	
	number	%
Complete myelopathy	18	36
Incomplete myelopathy	32	54
Total	50	100

Among 50 patients of the study population, 18 presented with features suggestive of complete myelopathy and 32 patients presented with features of incomplete myelopathy(Table-5).

Table 6: Incomplete myelopathy

Incomplete myelopathy	Cases	
	Number	%
Compressive	28	87.5
Non compressive	4	12.5
Total	32	100

Out of 32 patients with incomplete myelopathy, 87.5% patients had compressive cause for myelopathy(Table-6).

Table 7: Non compressive myelopathy

Non compressive myelopathy	Cases	
	Number	%
Central cord	2	50
Posterolateral sclerosis(PLS)	1	25
Miscellaneous	1	25
Total	4	100

Among the Non compressive causes of incomplete myelopathy one case of sub acute combined degeneration of spinal cord was reported(Table-7).

Table 8: bladder involvement

Bladder involvement	Cases	
	Number	%
With	25	50
Without	25	50
Total	50	100

50% of patients had bladder involvement(Table-8).

Table 9: radiological profile of complete myelopathy

Complete myelopathy	Cases	
	Number	%
MRI positive	10	55.6%
MRI negative	8	44.4%
Total	18	100

MRI was positive in 55.6% of patients who presented with features of complete myelopathy(Table-9).

Table 10 radiological profile of incomplete myelopathy

Incomplete myelopathy	Cases	
	Number	%
MRI positive	31	96.9%
MRI negative	1	3.1%
Total	32	100

MRI showed lesion in all most all cases who presented with features of incomplete myelopathy(Table-10).

Most common etiology of non traumatic myelopathy in our study was tumours, followed by potts spine and transverse myelitis. Six patients had longitudinally extensive transverse myelitis. In this study maximum incidence of TB spine was seen in 2-3 rd decade of life. In our study acute transverse myelitis was seen in 8 patients. MRI was done in all cases. Almost 50%of patients showed lesions on MRI in complete myelopathy and almost all patients in incomplete myelopathy. Other causes which constituted for non compressive myelopathy include SACD, syringomyelia, and ADEM(Table-11).

Table 11: Etiological profile of non traumatic myelopathy

Etiology	Cases	
	Number	%
Tumours	10	20
Potts spine	9	18
Disc prolapse	6	12
CV junction anamoly	4	8
Transverse myelitis	8	16
Longitudinally extensive TM	6	12
Sub acute combined degeneration of cord	1	2
Hereditary spastic paraplegia	1	2
ADEM	3	6
Syringomyelia	2	4
Total	50	100

Table 12: primary tumours

Tumours	Cases	
	Number	%
Astrocytoma	1	14.3
Nerve sheath tumours	5	71.4
Meningioma	1	14.3
Total	7	100

Nerve sheath tumours constituted majority of primary tumours(Table-12).

Table 13: CSF analysis

Series		ATM(n=14)	ADEM(n=3)
Appearance	Clear	14	3
	Turbid	0	0
Proteins (mg/dl)	Normal (15-50)	4	1
	Raised (>50)	10	2
	Decreased (<15)	0	0
Sugar(mg/dl)	Normal (40-70)	10	3
	Increased(>70)	4	0
	Decreased (<70)	0	0
Cells	Normal (0-5)	2	1
	Raised	12	2

Appearance of CSF was normal in all cases. 70% of patients had raised proteins. 82% of patients had csfpleocytosis(Table-13).

DISCUSSION

Quadriplegia and paraplegia are conditions with great morbidity and mortality with tremendous social repurcussions.

In our study youngest was 14 yr old and eldest was 67 yr old lady with mean age of 43 yrs. Majority of population was below 45 yrs which highlights the fact that young bread winning population is affected which causes considerable misery. Both males and females were equally affected.

64% of patients presented with quadriparesis, rest with paraperesis. 22% of patients presented with acute onset weakness, followed by 26% with insidious onset and remaining with sub acute onset. 18 patients presented with picture of complete myelopathy defined as involvement of descending tracts at the level of the lesion, 32 patients had incomplete myelopathy. Of those with incomplete myelopathy 28 patients had compressive cause and extra dural compression accounted for most of them (85%) [5, 6, 7].

Bladder involvement was seen in half of the patients. MRI was done in all cases which showed lesion in almost all cases of incomplete myelopathy.

The most common cause of compression was tumours. Its incidence in our study is around 20%, while in other studies its incidence varies from 21-30% of all compression .primary spinal cord tumours accounted for majority [7].

Tuberculosis was the second most common cause of compression in our study and was observed in 18% of patients[8, 9, 10]. In two studies reported in India in 2004 and 2008 tuberculosis was the leading cause of paraplegia and accounted for 22% and 18% of cases respectively.

Acute transverse myelitis (ATM) is a monophasic illness and represents a localized form of post infectious encephalomyelitis[11, 12, 13]. Incidence of ATM causing weakness was in 16%. Longitudinally extending transverse myelitis (LTEM) typically extends over 3 or more vertebral segments on MRI. In our study 12% of patients had LTEM. Sub acute combined degeneration of spinal cord was seen in only one patient in our study group.

Early suspicion, relevant investigations and early treatment is essential to prevent irreversible damage.

SUMMARY AND CONCLUSION

In our study it was found that

- Males and females are equally affected.
- Age group <45 yrs most commonly involved.
- Quadriparesis is the most common presentation.
- Majority of patients presented with subacute onset.
- Most common type was incomplete myelopathy.
- Tumours and potts spine accounted for most of the cases of compressive myelopathy.
- Acute transverse myelopathy was the most common cause of non compressive myelopathy.

Clinical and etiological profile of non traumatic myelopathy in our hospital is similar to that reported from other parts of India with tumours and tuberculosis accounting for more than half of cases of compressive myelopathy and acute transverse myelitis for no compressive myelopathy. This study brings out causes like ATM, SACD, and ADEM which are now better diagnosed and treated.

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