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A STUDY OF ETIOLOGICAL SPECTRUM OF NON-TRAUMATIC MYELOPATHY PRESENTING AS PARAPARESIS AT THE LEVEL OF TERTIARY CARE CENTRE

General Medicine

Dr Ajaykumar Yedve — Junior Resident, Dept of General medicine, GIMS, Gadag, karnataka.
Dr Sangamesh Asuti — Professor and HOD, Dept of General medicine, GIMS, Gadag, karanataka
Dr Shambu Purad — Assistant professor, Dept of General medicine, GIMS, Gadag, Karnataka.
Dr Vinaykumar M* — Assistant professor, Dept of General medicine, GIMS, Gadag, karnataka. *Corresponding Author

ABSTRACT

Objectives
- To determine the Etiological factors contributing to Non traumatic Paraparesis.
- To assess the clinical pattern of evolution and presentation of Non traumatic Paraparesis.

Methodology: It is an observational cross-sectional study of 50 cases. All the patients with non-traumatic paraparesis were screened clinically, biochemically and radiologically. The data obtained was analysed. **Results & Discussion**: Among 50 patients 68% had compressive myelopathy and rest 32% had non compressive type of myelopathy. The disease was progressive in 56%, non progressive in 44%. Tingling and numbness was the next major complaint after weakness in patients at 48%, followed by retention of urine 44%, backache in 36% of patient. The etiological spectrum of non-traumatic myelopathy was Pott's spine in 30%, tumors in 24%, Transverse myelitis in 16%, SACD in 08%, CIVDP in 12%, HIV myelopathy in 4%, Cauda equina syndrome, AV malformation and Epidural hematoma in 02% of patients each. **Conclusion:** Early suspicion and treatment initiation helps in addressing the reversible causes and prevent long term neurodeficit.

KEYWORDS

Non-traumatic myelopathy; Pott's spine, compressive & non-compressive myelopathy

INTRODUCTION

The term myelopathy is a pathological disorder that results in damage to or dysfunction of the spinal cord, meninges, or perimeninges. Myelopathies are categorised as compressive or non-compressive according to the Sicard and Forstier classification in reference to subarachnoid space obstruction.

Acute and chronic spinal cord compression illnesses include degenerative changes, trauma, tumour infiltration, vascular abnormalities, infections with the development of abscesses, and syringomyelia. A wide variety of disease entities, including demyelination, infection, nutritional, toxic, and degenerative diseases, are included in non-compressive myelopathy.

MRI, which is a very sensitive modality of investigation for the intramedullary spinal lesions[1] and availability of other investigations, it has become very important to have a relook at the profiles of non-traumatic myelopathies as many of the processes affecting the spinal cord may be reversible[2,3]. Hence the need to diagnose and treat early.

An elaborate understanding of the underlying etiological factors will be useful in managing spinal cord diseases more comprehensively.

AIMS & OBJECTIVES

- To determine the Etiological factors contributing to Non traumatic Paraparesis.
- To assess the clinical pattern of evolution and presentation of Non traumatic Paraparesis.

MATERIALS AND METHODOLOGY

It is an observational cross-sectional study of 50 cases. Purposive sampling method was done. Patients admitted with acute and subacute to chronic onset motor weakness of lower limbs due to non-traumatic etiology were studied. Patients were screened clinically and relevant biochemical analysis and appropriate neuroimaging studies were carried out in all. All cases with no visible compressive lesion on MRI were further investigated, which included serum HIV, VDRL, Mantoux, ESR, X-ray chest, serum B12. CSF examination was done to rule out secondary causes. All the data was entered in software version SPSS-29 and data was analysed.

Inclusion Criteria

- Age more than 12 years
- Acute and subacute to chronic onset motor weakness of lower limbs of non traumatic etiology.

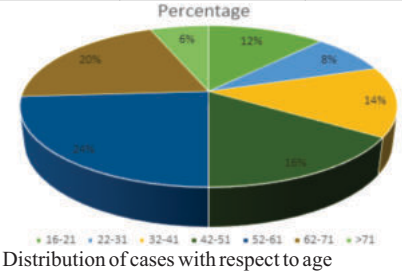
Exclusion Criteria

- Age less than 12 years
- Patients having traumatic Paraparesis
- Patients with quadriparesis

RESULTS

Table 1: Distribution of cases with respect to age – Majority of patients belonged to age group of 52-61years (24%), followed by 62-71years at 20%, followed by 42-51years at 16%. The least was from age group of more than 71 years at 6%.

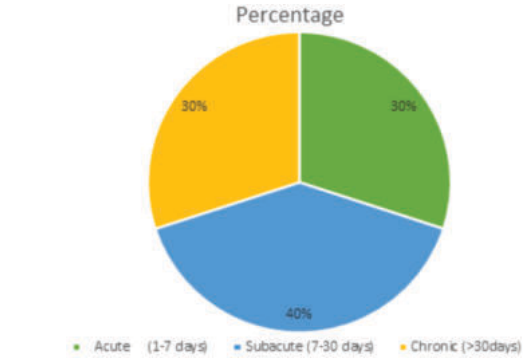
Age in years	No of patients	Percentage
16-21	06	12%
22-31	04	8%
32-41	07	14%
42-51	08	16%
52-61	12	24%
62-71	10	20%
>71	03	6%
Total	50	100%



Graph 1: Distribution of cases with respect to age

Table 2: Onset of weakness – Majority of patients had sub-acute presentation(40%), both acute and chronic presentation were seen in 30% each of the study population.

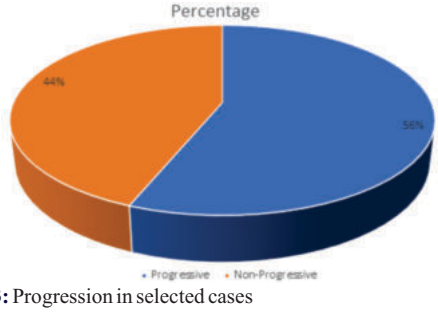
Onset	No of patients	Percentage
Acute (1-7 days)	15	30%
Subacute (7-30 days)	20	40%
Chronic (>30days)	15	30%



Graph 2: Onset of weakness

Table 3: Progression in selected cases – The illness was progressive in 56% of cases and non-progressive in 44% of cases.

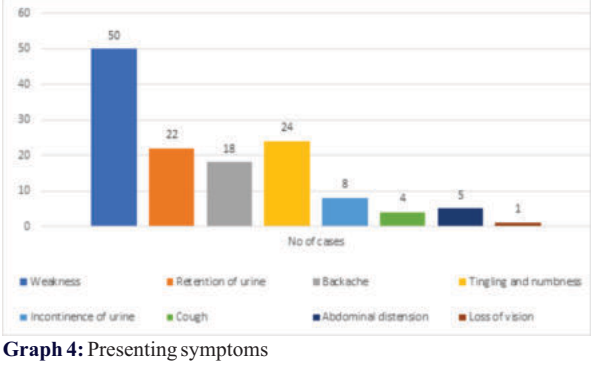
Progression	No of cases	Percentage
Progressive	28	56%
Non-Progressive	22	44%
Total	50	100%



Graph 3: Progression in selected cases

Table 4: Presenting symptoms - Weakness of bilateral lower limbs was present in all the study subjects, this was followed by sensory symptom of tingling and numbness in 48%, retention of urine in 44%, backache in 36%. Only 2% patient had associated vision loss.

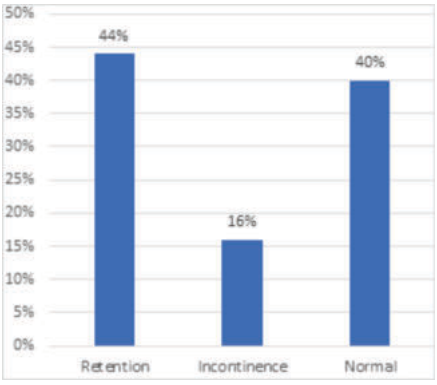
Presenting symptoms	No of cases	Percentage
Weakness	50	100%
Tingling and numbness	24	48%
Retention of urine	2	44%
Backache	18	36%
Incontinence of urine	08	16%
Cough	04	08%
Abdominal distension	05	10%
Loss of vision	01	02%



Graph 4: Presenting symptoms

Table 5: Bladder disturbances – 60% of study subjects had bladder symptoms out of which 44% presented with urinary retention and rest 16% with urinary incontinence. 40% of study subjects had no bladder involvement.

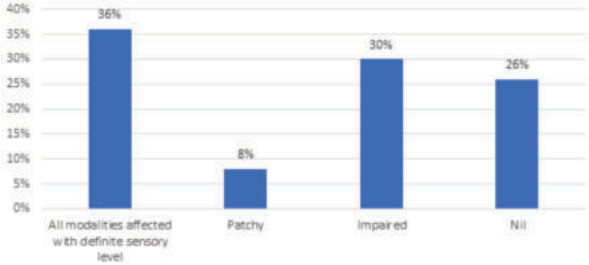
Bladder disturbances	No of cases	Percentage
Retention	22	44%
Incontinence	08	16%
Normal	20	40%
Total	50	100%



Graph 5: Bladder disturbances

Table 6: Sensory disturbances – 26% patients had no sensory involvement, 36% had all modalities affected with definite sensory level, 08% had patch sensory involvement and 30% had impaired sensation.

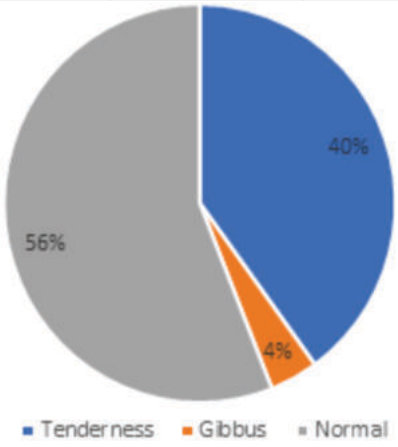
Sensory disturbances	No of cases	Percentage
All modalities affected with definite sensory level	18	36%
Patchy	04	08%
Impaired	15	30%
Nil	13	26%



Graph 6: Sensory disturbances

Table 7-Spine in selected cases – About 56% of study subjects had normal spine on physical examination. 40% of study subjects had spine tenderness and rest 4% had gibbus.

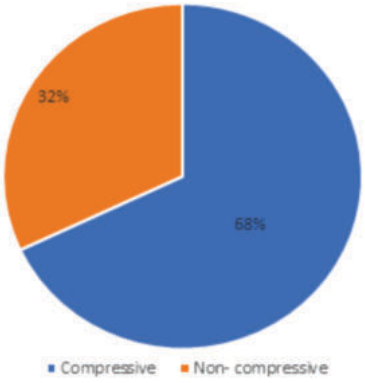
Spine	No of cases	Percentage
Tenderness	20	40%
Gibbus	02	04%
Normal	28	56%
Total	50	100%



Graph 7: Spine in selected cases

Table 8: Type of Myelopathy – 68% had compressive myelopathy and rest 32% had non compressive myelopathy.

Type of myelopathy	No of cases	Percentage
Compressive	34	68%
Non- compressive	16	32%
Total	50	100%



Graph 8: Type of Myelopathy

Table 9: Etiological diagnosis – The most common etiology was pott's spine among 30% of patients followed by Tumors at 24%. Cauda equina, AV malformation, Epidural hematoma were the least common etiology with each in 2% of study population.

Etiological diagnosis	No of cases	Percentage
Pott's spine	15	30%
Tumors	12	24%
Transverse myelitis	08	16%
SACD	04	12%
CIVDP	06	08%
HIV myelopathy	02	04%
Cauda equina syndrome	01	02%
AV malformation	01	02%
Epidural hematoma	01	02%
Total	50	100%

DISCUSSION

A total study population of 50 patients with non-traumatic paraparesis was studied, out of which 68% had compressive myelopathy and rest 32% had non compressive type of myelopathy. In our study higher prevalence of paraparesis was in 52-61 years age group and least among >71 years.

The weakness was acute onset in 30%, subacute in 40%, chronic in 30%. The disease was progressive in 56%, non progressive in 44%. Tingling and numbness was the next major complaint after weakness in patients at 48%, followed by retention of urine 44%, backache in 36% of patient. One patient had complaint of loss of vision along with weakness. 44% had urinary retention, 16% had incontinence and 40% had no bladder disturbances.

36% of patients had all modalities affected with definite sensory level, 08% had patchy, 30% had impaired and 26% had intact sensations.

On examination of spine 40% had tenderness, 04% had gibbus, 56% had normal spine.

The etiological spectrum of non-traumatic myelopathy was Pott's spine in 30%, tumors in 24%, Transverse myelitis in 16%, SACD in 12%, CIVDP in 08%, HIV myelopathy in 4%, Cauda equina syndrome in 02%, AV malformation in 02% and Epidural hematoma in 02% of patients.

Pott's spine was the most common cause for nontraumatic myelopathy presenting as paraparesis in our study which is comparable to the other studies[4-7]. Second most common cause of cord compression was tumor. Its incidence in our study is 24% while in other studies its incidence varies from 21-30% of all compression. (Mani et al, Mehrotra et al, Chaudhary et al)[8-10]. Acute Transverse Myelitis is a monophasic illness and represents a localized form of post infectious encephalomyelitis[11]. It was present in 16% of cases which was comparable to other studies[9]. The clinical picture of severe vitamin B12 deficiency consists of macrocytic anemia, atrophic glossitis, peripheral and central neurological disorders.17 One of the most prevalent manifestationsis is subacute combined degeneration (SACD) of the spinal cord.. In a study of 143 patients of neurologic disorder due to vitamin B12 deficiency by Healton EB et al pernicious anemia was the most common underlying cause of cobalamin deficiency in their study[12]. It was 4th common cause of non-traumatic myelopathy in our study accounting for 12% of study participants.

CONCLUSION

Non traumatic paraparesis is a common cause of neurological morbidity. The study showed the treatable causes of paraparesis like Tumors, Pott's spine, ATM, Disc prolapse and Sub acute combined degeneration of spinal cord are common causes.

This study showed Tuberculosis as the commonest cause of non-traumatic myelopathy presenting as paraparesis. Sub-acute onset and progressive illness with weakness and tingling sensation as presntation were seen in majority of study participants. Compressive myelopathy was more common than non-compressive myelopathy

Early suspicion, relevant investigations and early treatment will help to prevent long term neurodeficit and reduce the disease burden, economic cost due to the disability to the family and the Nation at large.

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