Original Article

Clinical profile of mononeuritis multiplex in a tertiary care hospital

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Abstract

Introduction: Mononeuritis multiplex is an asymmetric synchronous sensory and motor neuropathy involving isolated damage to at least two separate non-contiguous nerve trunks. There have been few studies on clinical profile of mononueritis multiplex. This study is done to find out clinical profile of mononeuritis multiplex. Aims To assess clinical profile of Mononeuritis multiplex **Settings and Design:** A cross sectional study was conducted assessing all patients with mononeuritis multiplex admitted in neurology department Materials and **Methods:** This clinical investigation was conducted in the Department of Neurology. The study was conducted from January 2011 to December 2011. **Inclusion Criteria** 1. Patients with a definite diagnosis of Mmononeuritis multiplex were included. Statistical **Analysis Used: D**escriptive statistics were calculated using SPSS software. Chi square test was used to get the significance. Results Out of the 41 patients studied vasculitis constituted 63%, Hansen's 17.1%.Out of this 85% are males and 15% are females. Common peroneal nerve was the most common nerve to be involved (53.4%) followed by Median (37.5%), Ulnar (29.54%).

Keywords: Mononeuritis multiplex, clinical profile, vasculitis, Hansen's.

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INTRODUCTION

Multiple mononeuropathy is a type of peripheral neuropathy. It is defined as a disorder involving two or more peripheral nerve trunks. Many nerves in various areas of the body can be affected. It is a asymmetrical, asynchronous sensory and motor peripheral neuropathy. As the condition worsens, it can be distributed bilaterally, distally and proximally throughout the body, and it becomes less multifocal and more symmetrical (Oh, 2001). Nerve biopsy is diagnostic in the following conditions: Necrotising vasculitis, Amyloid Neuropathy, Leprosy, Sarcoid Neuropathy, Neoplastic infiltration of nerve. Necrotizing vasculitis causes neuropathy through ischemic injury to the vessels supplying the nerve. Poor collateral circulation in the nerves makes them susceptible to ischemic injuries. Commonly involved nerves with these features tend to be in the mind upper arm and mid thigh in the "watershed zone". Vasculitic neuropathy most often presents as mononeuropathy multiplex (i.e., in more than 60% of patients), with the peroneal nerve most commonly affected (89% of patients), followed by the sural nerve (84%), tibial nerve (68%), ulnar nerve (42%), and median nerve (26%).

MATERIALS AND METHODS

This study is a hospital based prospective study conducted among 41 patients who presented to Neurology department in Kasturba Medical College, Manipal as inpatients. All patients were evaluated with detailed history, physical examination. Diagnosis of Mononeuritis multiplex was made based on clinical history/examination. Patients with other forms of neuropathy were excluded. Routine investigations were done for all patients including Complete blood picture with ESR, Urineroutine, Fasting and Post prandial Sugars, LFT, RFT. Specific investigations were sent

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whenever suspected like ANA, ANCA, HIV, HBsAG, HCV, Proteinelectrophoresis. Nerveconduction study was done for all patients. Neuropathies were classified as Axonal or demyelinating. Profile of nerves involved were studied. Nerve biopsies were done for all patient. Most involved nerve was selected for biopsy. The nerve specimen was packed in formalin containers and sent to Neuropathology department, NIMHANS, Bangalore. Nerve biopsy was analysed to look for axonal and demyelinating features. Specific histolopathological features of the clinical diagnosis suspected were looked for. The biopsy report was compared to the nerve conduction studies and clinical features.

RESULTS

In this study 41 patients were studied out of which 35 were males(85%) and 6 were females(15%).

Table 1: Symptomatology

Symptoms	Frequency	Percentage
Weakness	34	82.97%
Tingling	29	70.73%
Numbness	29	70.73%
Weight loss	8	19.5%
Polyuria,Polydypsia,Polyphagia	6	14.6%
Photosensitivity	2	4.8%
Fatigue	5	12.19%

Table 2: SIGNS

Signs	Frequency	Percentage
Sensory involvement	38	92.68%
Motor involvement	35	85.3%
Thickened nerves	10	24.39%
Pallor	6	14.63%
Lymphadenopathy	4	9.75%
Hypopigmented skin lesions	4	9.75%
Arthritis	4	9.75%

Table 3: Nerves Involved Clinically

Nerves	Clinically Involved
Common peroneal	53.4%
Median	37.5%
Ulnar	29.54%
Tibial	26.4%
Sural	27.2%
Radial	9.1%
Saphenous	18.1%

A total of 41 patients of Mononeuritis Multiplex were studied over a period of 1 year. A total of 41 patients of Mononeuritis Multiplex were studied over a period of 1 Year. Among the patients Vasculitis (63%) constituted the most common cause followed by Hansen (17.1%), Diabetecmononeuritis multiplex (7%), MADSAM (7%), 1 case each of HNPP, Post infective mononeuritismultiplex, Axonal neuropathy ? cause

Age at presentation

In the present study the Mean age of presentation was 50.7 years with the maximum incidence in the sixth decade

Sex

85 % were males and 15 % were females.

Clinical symptoms and signs

Most patients had weakness (82.9%) followed by tingling (70.7%), numbness (70.7%), weight loss (19.5%), polyuria polydipsia polyphagia (14.6%), fatigue (12%), photosensitivity (4%) Most common signs were Sensory signs (92.68%), motor involvement (85.3%), thickened nerves(24.3%), pallor(14.6%), lymphadenopathy(9.75%), hypopigmented lesions (9.75%), arthritis(9.75%)

Nerves involved

Most commonly involved nerves clinically were common peroneal (53.4%), Median (37.5%), Ulnar (29.54%), Sural (27.2%), Tibial (26.4%), Saphenous (18.1%), Radial (9.1%)

Investigations

In the present study 66% had normal hemoglobin, 34% had anemia. 34% had high total counts and 3% had low counts.3 patients had low platelet counts (<1.5 lacs).20 patients had high ESR >10. 2 patients had ANA positive, 2 had pANCA positive and 1 had cANCA positive. 1 patient had low Vit B 12. 1 patient had low TSH.

Nerve conduction study

NCS was done for all patients and analysed. 23 had predominantly Axonal neuropathy,8 had predominantly demyelinating neuropathy,10 had mixed picture. Among patient with vasculitis Ulnar was most commonly involved (22)-8 axonal,3 demyelinating,9 mixed, followed by median In Hansen's Median was most commonly involved (6) followed by ulnar(5). In diabetecmononeuritis multiplex Median was most involved 23 patients had Axonal neuropathy,8 had demyelinating neuropathy and 11 had mixed picture. Conduction block was present in 6 patients in the Ulnar nerves, 3 patients in the peroneal nerves, 2 patients in thetibial nerves 1 patient in the radial nerve.

Nerve biopsy

Biopsy were analysed. 36 Biopsy reports correlated with NCS findings i.e had axonal /demyelinating features as picked up by NCS. in 1 patients NCS did not pick up axonopathy picked by biopsy and in 2 patients NCS did not pick up demyelination picked up by biopsy. In 2 patients biopsy was normal though NCS showed axonal neuropathy. 3 biopsies had bands of Bungner.

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DISCUSSION

Mononeuritis multiplex is a type of peripheral neuropathy. It may be seen with a variety of clinical illnesses. In our study out of 41 patients 26 had vasculitis (63%). Of these 2 patients had positive ANA,2 patients had p ANCA positive and 1 patient had c ANCA positive. Vasculitic neuropathy is an immune mediated disorder characterized by ischemia and infarction of the peripheral nerves[1]. Of the patients with vasculitic neuropathy 2 patients had SLE,1 had Wegener's granulomatosis. Mononeuritis multiplex is the common clinical presentation of vasculitis. Over time these patients develop into distal symmetric polyneuropathy. Patients typically present with an acute onset of pain and progressive sensory and motor deficits in the distribution of specific nerves. The clinical course may be step-wise or progressive. 7 patients had Hansen's disease. Hansen's disease is one of the most common causes of nontraumatic peripheral neuropathy in the developing world. The causative agent, Mycobacterium leprae, has a predilection for Schwann cells[2]. The cardinal diagnostic features of leprosy are neuropathy, anesthetic skin lesions, and positive skin smears for the bacilli. However, patients may rarely present without skin lesions in pure neuritic leprosy. Hansen's disease may present with an area of sensory loss without a patch, painless trophic ulcers in the feet or in the hands, mononeuropathy or mononeuropathy multiplex or nerve thickening with or without other neurological features. Hansen's disease may present with an area of sensory loss without a patch, painless trophic ulcers in the feet or in the hands, mononeuropathy or mononeuropathy multiplex or nerve thickening with or without other neurological features. 3 patients had diabetic mononeuritismultiplex. The prevalence of true mononeuritis multiplex in diabetes is unknown and it is possible that the condition is underrecognised. There have been no large series of cases, and some that have been reported as having mononeuropathy multiplex in fact had diabetic amyotrophy. The risk of developing peripheral neuropathy correlates with the duration of DM, glycemic control, and presence of retinopathy and nephropathy[3]. 3 patients had MADSAM. Lewis-Sumner syndrome or MADSAM (multifocal acquired demyelinating sensory and motor neuropathy) is characterized by weakness and atrophy in the distribution of individual peripheral nerves with upper limb predominance. The predominant electrophysiological features are the presence of motor conduction block, contrasting with a mild degree of demyelination outside the blocked nerve territory. Sural nerve biopsies showed elements consistent with primary demyelination. In this study most of the diseases were diagnosed by using history, clinical examination, electrophysiology, nerve biopsy. Nerve biopsy is vital to the diagnosis of mononeuritis multiplex[7.] Biopsy results correlated with clinical as well as electrophysiological findings. Hence biopsy is vital in all cases of mononeuritismultiplex. Detailed work up is vital in cases of mononeuritis multiplex.

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