

Pattern of post injection nerve palsy in Mewat Region of Haryana

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Abstract

Introduction: Injection nerve palsy (INP) occurs when there is injury to peripheral nerves after accidental injections of drugs by intramuscular root. INP after having intramuscular injections (IMI) can be traced back more than 100 years ago.

Objective: To conduct nerve conduction studies of Sciatic and radial nerve after intramuscular injections in gluteus and deltoid regions.

Material and Methods: A total of 40 patients were investigated as referred from various departments of our college and nerve conduction velocity (NCV) studies were done to know the amount and distributive pattern of nerve injuries using Allengers Scorpio 4 channel machine.

Results: Mean age of the patients was 20.9 years. Out of 40 patients, patients showed sciatic nerve involvement while patients were having radial nerve involvement. 28 (70%) Patients came back within one year of post injection history while 12 (30%) patients reported after more than one year.

Conclusion: the sole aim of our study was to define the distributive pattern of nerve injuries in Mewat region and to signify the importance of NCV studies in treatment and prognosis.

Keywords: INP (Injection Nerve Palsy), NCV (Nerve Conduction Velocity), IMI (Intramuscular Injection).

Introduction

Injury to the peripheral nerves from accidental injection of drugs or direct injuries by needle are quite common in the developing countries because of unethical use of intramuscular injections for treating various diseases.^(1,2) In developing countries each person receives approximately two injections in a year. Most of such injections are administered by untrained health workers, quacks, friends and relatives etc. for fever, pain, infections etc.⁽³⁾ Purpose of this study was to estimate the pattern of nerve injury in population of mewat region of Haryana which is considered a backward region.

Material and Methods

A total of 40 patients were sent for nerve conduction study in the department of physiology in a tertiary care hospital situated in Mewat region of Haryana, who were having sign and symptoms of nerve injury after administration of intramuscular injections. Out of forty 18 were females and 22 were males. Nerve conduction study was done by Allengers Scorpio 4 channel machine by placing recording electrodes as per NCV guidelines. Stimulus was given at two different proximal sites along the course of nerve under study. Definitive nerve injury was declared when there were no recordings present.

Observation and Results

A total of 40 patients with post injection nerve palsy were studied. Among these 22 were males and 18 were females with a mean age of 20.9 years. Table 1

shows the frequency of patients with nerve injury according to age group as depicted in Fig. 1.

Table 1: Age-group wise distribution of patients

S. No.	Age Group	Frequency	Percentage
1.	0-9	13	32.5
2.	10-19	10	25
3.	20-29	11	27.5
4.	30-39	1	.025
5.	40-49	1	.025
6.	50-59	2	.05
7.	≥60	2	.05

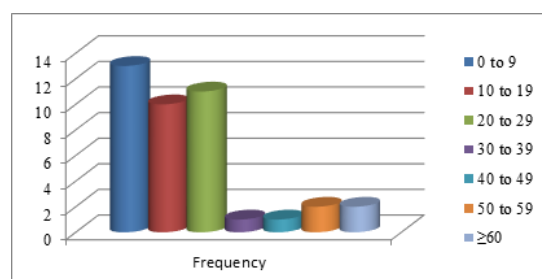
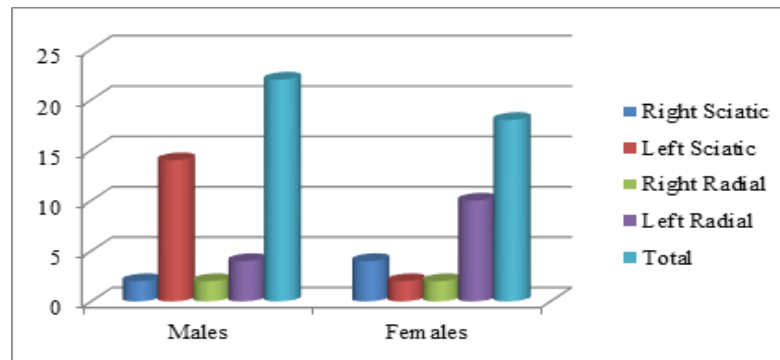


Fig. 1: Age-group wise distribution of patients

Out of 40 patients investigated, the sciatic nerve involvement was in 22 patients while 18 patients were suffering from radial nerve injury. Among 22 patients of sciatic nerve involvement, 16 were affected on left side and 6 were affected on right side. The radial nerve involvement was also more on left side than that of right side, as out of 18 patients, 14 were having nerve injury on left side, while rest 4 patients were having it on right side. The same was shown in Table 2 and depicted in Fig. 2.

Table 2: Distribution of nerve injuries according to gender

	Right Radial	Left Radial	Right Sciatic	Left Sciatic	Total
Males	2 (50%)	4 (28.57%)	2 (33.33%)	14 (87.5%)	22 (55%)
Females	2 (50%)	10 (71.43%)	4 (66.67%)	2 (12.5%)	18 (45%)
Total	4	14	6	16	40

**Fig. 2: Distribution of nerve injuries according to gender.**

Discussion

In this study, we examined radial nerve injury in upper limb and sciatic nerve injury in the lower limb most of the patients presented in outdoor departments of our college within one year (70%) complaining neurological deficit and pain distribution along the supply of nerve after administration of injection. Rest of the patients (30%) appeared late. The degree of post injection nerve injury ranges from minimal sensory involvement to severe motor function disorder. In the literature it was shown that children were most commonly affected group after post injection palsy.^(1,4,5) Our study also goes on the same line as 32.5% of children of the age group 0-9 years were affected. The second most common group was 20-29 years (27.5%), while 25% were in the age group of 10-19 years. In a study conducted in North India, the mean age was 28 years.⁽⁶⁾ In the literature it was also shown that males were more affected than females^(1,2,7,8) because of a thinner pad of fat. Our study also points out the same as 55% of males were affected in comparison to 45% of females. One peculiar thing comes out from our study is that males were mostly affected on their left side (18 out of 22) and same was the case with females (12 out of 18). The probable explanation for this may be because of ease of administration of injection on left side from patient point of view, but we are unable to gather any supportive document from literature to support this.

Conclusion

In the end, we can say that sciatic nerve injury in the lower limb along with radial nerve injury in the upper limb is an important cause of post injection palsy following injection administration. Nerve conduction

velocity (NCV) studies can be used as an important tool in the treatment as well as prognosis of the disease.

References

1. Yermeyeva E, Kline DG, Kim DH. Iatrogenic sciatic nerve injuries at buttock and thigh levels: the Louisiana State University Experience Review. *Neurosurgery* 2009;65:A63-6.
2. Bramhall RJ, Deveraj VS. Traumatic sciatic nerve palsy after gluteal injection. *Eur J Plast Surg* 2011;34:137-8.
3. Kotwal A, Priya R, Thakur R, Gupta V, Kotwal J, Seth T. Injection practices in a metropolis of North India: Perceptions, determinants and issues of safety. *Indian J Med Sci.* 2004;58:334-44.
4. Villajero FJ, Pascual AM. Injection injury of the sciatic nerve (370 cases). *Child Nerve Sys* 1993;9:229-32.
5. Mishra P, Stringer MD. Sciatic nerve injury from intramuscular injection: a persistent and global problem. *Int J Clin Pract* 2010;64:1573-19.
6. Pandian JD, Bose S, Daniel V, Singh Y, Abraham AP. Nerve injuries following intramuscular injections: A clinical and neurophysiological study from Northwest India. *J Peripher Nerv Syst.* 2006;11:165-71.
7. Sevim S, Kaleagasi H. Sciatic injection injuries in adults: is dipyrone a foe to nerve. *Acta Neurol Belg* 2009;109:210-3.
8. Akyüz M, Turhan N. Post injection sciatic neuropathy in adults. *Clin Neurophysiol* 2006;117:1633-5.