



Injection-induced Sciatic Nerve Injury Among Children Managed in a Nigerian Physiotherapy Clinic: A five-year review

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SUMMARY

Injection-induced sciatic nerve injury is a well-known complication of intra-muscular gluteus muscle injections. Affected individuals usually present with foot drop and this results in varying degrees of motor disability depending on the timing, quality and duration of the remedial measures instituted. This study was carried out to evaluate the pattern of cases of injection-induced sciatic nerve injury among children referred to the Outpatient Physiotherapy Clinic of the Federal Medical Centre, Ido-Ekiti, Nigeria.

A retrospective review of the case notes of all paediatric patients referred to the physiotherapy clinic on account of injection-induced sciatic nerve injury from November 2005 to October 2010 was done. Information obtained included age, gender, side affected, personnel/place where injection was administered, the mode of physiotherapy intervention, number of sessions, impairment variables at presentation and underlying indication for injection administration.

A total of 33 (19.64%) cases of sciatic nerve palsy out of 168 paediatric patients managed at the physiotherapy clinic within this 5-year period were reviewed. The ages of the participants ranged from 0-14 years. Sixteen (48.5%) of the patients were male while 17 (51.6%) were female. The side affected in 17 (51.6%) of the patients was the right while the left was affected in 16 (48.5%) patients. The right side was more affected in the females (12) while the left side was more affected in the males (11). Most incidences of injection-induced sciatic nerve palsy occurred in private hospitals (45.5%). A majority of the patients (69.7%), as reported by their carers and relatives, had the injections administered by nurses.

The results revealed that a lot of effort should be made by the relevant authorities to ensure that medical and health professionals who administer injections adhere strictly to safe ethical practices and that unqualified personnel are not allowed to operate.

KEY WORDS: children, sciatic nerve palsy, injection

INTRODUCTION

Intramuscular injection (IM) is the administration of medication through a skin puncture by a syringe and a needle deep into a large muscle of the body for prophylactic or curative purposes (Halsey, 2003). It is presently a common practice in developing countries, especially among the paediatric age groups (Adetunji et al., 2006). According to the World Health Organization (WHO), it has been estimated that out of the 12 billion injections administered worldwide annually, 50% are unsafe and 75% are unnecessary (Miller and Pisani, 1999). Sciatic nerve, the most common nerve injured by intramuscular injections, especially in children, manifests

as paresis in the sciatic distribution followed by a causalgia or burning pain in the extremities, several hours or days later (Mayer and Romain, 2001; Miller and Pisani, 1999). Neurological sequels can range from minor transient sensory disturbance to severe sensory disturbance and paralysis, with poor recovery (Napiontek and Ruskowski, 1993).

The most common causes of injection nerve palsy are unnecessary injections, faulty techniques and administration of injections by unqualified personnel (Adetunji et al., 2006; Fatunde and Familusi, 2001). Children with neurological conditions often require a rehabilitation team approach for optimum care (Logigian,

1989). According to the Royal College of Paediatrics and Child Health (2004), the paediatric physiotherapist is a core member of the multidisciplinary rehabilitation team.

A majority of the existing studies conducted on injection-induced nerve palsies have been carried out in major Nigerian cities (Alonge and Akinwola, 2010, Fapojuwo et al., 2008, Ezeukwu, 2007; Oyedeji et al., 2006, Fatunde and Familusi, 2001). There is an apparent dearth of published materials on the prevalence of injection-induced sciatic nerve palsy in rural settings in Nigeria. This study will enrich the data on injection-induced sciatic nerve palsy in Nigeria. This study investigated the pattern of cases of injection-induced sciatic nerve injury among children seen at the Physiotherapy Clinic of the Federal Medical Centre, Ido-Ekiti, between the 1st of November 2005 and the 30th of November 2010.

METHODOLOGY

Ethical approval was obtained from the institutional review committee of the Federal Medical Centre, Ido-Ekiti. Information was obtained from the case files of all children seen at the physiotherapy clinic within the 5-year period under review. The case files of patients diagnosed with sciatic nerve injury following injection were sorted out. The following information was obtained from the records: sex, age, side affected, personnel/place where injection was administered, indication for injection administration, and other relevant details (e.g. total number of patients treated each year, total number of male and female patients yearly, mode of physiotherapy intervention, number of sessions and impairment variables at presentation). Data analysis was done using SPSS version 16. Descriptive statistics were computed using proportions.

RESULTS

A total of 168 patients were seen at the paediatric unit of Physiotherapy Department of the Federal Medical Centre, Ido-Ekiti in the 5-year period reviewed. Clinical diagnosis of injection-induced sciatic nerve injury was made in 33 (19.6%) of the cases. Table 1 shows the pattern of age distribution across the years. Although the 0-2 years age group had the highest number of cases (17), the cases were higher for the 3-5 years age group (6) from November 2008 - October 2009. The highest numbers of cases were seen between November 2008 and October 2009, while the least was seen between November 2005 and October 2006. About 84.5% of the total number of patients were aged 5 years and below.

Table 1. Age distribution of patients across the years

Period	Agr Range (Years)				Total
	0-2	3-5	6-8	≥9	
Nov 2005-Oct 2006	1	1	0	0	2
Nov 2006-Oct 2007	2	1	2	0	5
Nov 2007-Oct 2008	5	1	0	1	7
Nov 2008-Oct 2009	5	6	0	0	11
Nov 2009-Oct 2010	4	2	1	1	8
Total	17	11	3	2	33
% Total	55.1	33.3	9.1	6.1	

Sixteen (48.5%) of the patients were male while 17 (51.6%) were female. Sex distribution according to side affected is shown in table 2. Seventeen (51.6%) of the cases were affected on the right side while 16 (48.5%) were affected on the left. The right side was more affected in the female patients (12) while the left side was more affected in the male patients (11).

Table 2. Sex distribution of lower limb affected

Sex	Number of Patients	Percentage Total
Males		
Right	5	15.2
Left	11	33.3
Females		
Right	12	36.4
Left	5	15.2

Malaria was the major underlying indication for injection administration (63.6%), followed by unspecified fever (12.1%) and jaundice (6.1%). There was no record of an underlying medical diagnosis in 18.2% of the cases. Data obtained from the records on where the injections were administered showed that 1 (3%) patient had the injection administered at a dispensing shop, 15 (45.5%) had the injections administered at a private hospital, 7 (21.2%) at a health centre, 1 (3%) at a tertiary hospital, and 4 (12.1%) at home. Five (15.2%) had no record of where the injection was administered. The records did not contain the names of the drugs injected. Results also showed that 69.7% of the injections were given by nurses, 3% by parents, 1% by doctors, 1% by patent medicine vendors, and 1% by other relatives. Some of the case notes (4%) had no record of who administered the injections. The most common feature at presentation was inability to walk properly

(72.7%), followed by foot drop (39.4%), and pain at either the gluteal region or lower limb (26.4%). There were overlaps of these features in most of the patients. The number of physiotherapy sessions ranged from 1 to 14 (mean: 4.72 ± 3.37). The most frequently used mode of treatment was walking re-education (75.8%). This was followed by passive movement (72.7%), muscle strengthening exercises (66.7%), infra-red radiation (54.5%), soft tissue mobilization (45.5%), and splinting (33.3%). Others were electric nerve stimulation, passive stretching, tactile stimulation, cryotherapy and ultrasound therapy. No record of discharge was found in 95% of all the cases.

DISCUSSION

The number of cases (33) of injection-induced sciatic nerve injury observed in this 5-year review is lower than the 95 cases recorded by Hamzat and Omotade (2006) in a 5-year review of cases of acute flaccid paralysis in a Nigerian physiotherapy clinic and the 313 cases reported by Ezeukwu (2007). It was however higher than the 27 cases reported in a study by Fatunde and Familusi (2001) over a 12-year period.

The male to female ratio of patients in this study was 1:1.06. This is contrary to the observation in the studies by Alonge and Akinwola (2010), Ezeukwu (2007), and Oyedemi et al., (2006), where the male patients affected were more than the female (ratios 1.41:1, 1.13:1 and 1.7:1, respectively). The results of this study also showed that the 0-2 years age group had the highest incidence (51.5%) of the cases of sciatic nerve injury following injection. This implies that this group is highly-vulnerable.

All the cases reviewed were unilateral in presentation with more cases seen of the right (52.5%) lower limb than the left. This was higher than the cases reported by Ezeukwu (2007). The right side was more affected in the females (11) while the left side was more affected in the males (12).

The highest number of cases of injection-induced sciatic nerve injuries occurred in the private hospitals (45.5%). This is in agreement with the findings of Alonge and Akinwola (2010). Orubuloye and Ajakaiye (2002), which further emphasized that a larger proportion of women in both urban and rural areas sought treatment for their children in private hospitals, followed by government health facilities, then self-medication, and lastly, chemists/medicine stores. The reasons given for this preference included better and prompt service and flexible bill payment facilities. Such patients opt for injections

rather than pills on getting to such facilities because of the belief that they provide the best and fastest solution to their health problems. Awareness campaigns should be carried out to enlighten members of the public, in order to change their mindset.

A majority of the injections administered were given by nurses (69.7%). This result is consistent with those of other studies (Alonge and Akinwola, 2010; Oyedemi et al., 2006). However, it may not be impossible that the so-called 'nurses' are auxiliary nurses or other health attendants. This situation points to the need to organize compulsory update and refresher courses for all health service staff who are involved in the administration of injections, and at the same time identify and sanction all forms of unqualified personnel.

No record of discharge was found in 95% of the cases, probably because patients absconded for financial reasons or because they believed that their condition was due to evil spiritual forces. This also highlights the need for educating communities about the damage caused by unnecessary and unsafe injection procedures. A better-funded and organized physiotherapy unit with facilities for mobile community services to enable defaulters to be traced and treated at home may be necessary. Also, physiotherapists should plan treatment programmes keeping in mind the fact that discharge before the end of treatment may be inevitable.

CONCLUSION

Injection-induced sciatic nerve injury is common among paediatric patients seen at the Federal Medical Centre, Ido-Ekiti. More females than males were affected. The occurrence of sciatic induced nerve palsy is more common in private hospitals than in public hospitals.

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