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CASE REPORT

Iatrogenic sciatic nerve injury: A case report

Navin Kumar Devaraj, Aneesa Abdul Rashid, Puteri Shanaz Jahn Kassim, Hanifatiyah Ali

Sciatic nerve injury is an uncommon presentation seen in primary care. Detailed history and careful physical examination may sometimes be able to elicit this diagnosis and its possible cause. Sometimes additional imaging modality such as ultrasound or magnetic resonance imaging may be needed to confirm the diagnosis.

This case report will look at a case of 60-years old woman who presented with severe pain and limping over her right lower limb which eventually linked to intramuscular injection given two days earlier for severe knee pain.

Navin Kumar Devaraj*
Department of Family Medicine,
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia,
Selangor Darul Ehsan, Malaysia
knavin59@yahoo.com
knavin@upm.edu.my

Aneesa Abdul Rashid,
Department of Family Medicine,
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia,
Selangor Darul Ehsan, Malaysia

Puteri Shanaz Jahn Kassim,
Department of Family Medicine,
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia,
Selangor Darul Ehsan, Malaysia

Hanifatiyah Ali
Department of Family Medicine,
Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia,
Selangor Darul Ehsan, Malaysia

*Corresponding autho

Introduction

Intramuscular injection is an important way of administering drugs especially in patients who are having severe symptoms such as vomiting, severe pain or severe allergy; if the patient is unable to tolerate orally or for certain oil based or crystallised medication such testosterone or benzylpenicillin. It is usually given over the gluteal region. However, an improperly placed injection on the gluteal region may lead to many unforeseen problems. This includes partial or permanent sciatic nerve injury resulting in transient or permanent mild to severe sensory and motor disturbance including paralytic foot drop.[1] Other complications will include formation of haematoma and infection among others.

This case will look at one such unfortunate incident involving an elderly woman who presented with limping and severe pain over her right lower limb after an intramuscular diclofenac injection.

Case Report

A 60-years old woman with underlying bilateral severe osteoarthritis had severe exacerbation of right knee pain for two days due to excessive exertion a day earlier. The pain score was 8/10 and the patient was unable to sleep the night before. She noted her pain was exacerbated by walking and relieved by lying down. She therefore sought treatment at her regular general practitioner. She requested for intramuscular injection as oral analgesics was unable to reduce her pain. A 75mg of intramuscular diclofenac sodium injection was given on the right mid-gluteal region under aseptic technique.

Post injection, her knee pain score reduced to 3/10. She was given a short course of oral analgesics which included regular paracetamol and diclofenac sodium. The next day, her pain score reduced further to 1-2/10 and she was able to counter her knee pain with just paracetamol. However, towards the evening, she noted some pain over her injection site causing her to limp. She ignored her symptoms hoping it to get better by the next morning.

The next morning however, she noted the pain over the injection site having increased to give a higher pain score of 10/10. She noted her pain to radiating from the hip to the lower leg. Her right lower leg limp also followed suit, and she had to use a walker to ambulate. The oral analgesics prescribed earlier had minimal effect on her pain. There was no fever.

The severe pain persisted despite taking oral analgesic which lead her to visit to a private hospital rheumatologist. Upon examination, the rheumatologist noted there was small swelling over the injection site at the right mid-gluteal region measuring 3x3 cm. The rheumatologist noted there was also weakness on extending and flexing the right knee with no numbness or foot drop.

An ultrasound of the right gluteal region was performed and it showed a haematoma compressing on the right sciatic nerve. The rheumatologist then proceeded to perform aspiration of the haematoma drawing out about 30mls of blood under aseptic technique. This provided much relief to the patient's symptoms. Her pain score reduce to 5/10 and her limping subsided.

Over the next two days, her pain reduced further and she was able to do her daily activities. She promised herself to be wary of asking for intramuscular injection in the future, reserving it only if she truly needs it. She was very thankful she did not suffer permanent sciatic nerve paralysis.

Discussion

There is limited data on injuries secondary to intramuscular injections in adults.[2] An older paper reported its incidence as only 0.4% and the injuries included abscess, erythema, wheal and induration formation, persistent local pain, hematoma or bleeding, and subcutaneous fat nodules formation.[3] This case illustrates the caution which must be taken when administering an intramuscular injection over the gluteal region. There is a consensus that upper outer quadrant is the safest site as it avoids many important structures such as gluteal nerves (superior and inferior gluteal nerves, posterior cutaneous nerve and the largest nerve in the body, sciatic nerve (L4-S3), a branch of the sacral plexus which passes under the gluteal maximus muscle and descends into the middle of the posterior thigh, and gluteal arteries such as superior gluteal artery and inferior gluteal artery which lies medial to the sciatic nerve. [1]

The most common mechanism for injury to the sciatic nerve is surprisingly intramuscular injury and not due to direct injury secondary to fall or motor vehicle accident.[4] The most common presentation of a sciatic nerve injury is radicular pain and paraesthesia accompanied by variable sensory and motor component deficit with often poor prognosis for recovery.[4]

In a study done over a period of three years in Iraq, complete recovery was reported in only 30% of patients with sciatic nerve neuropathy following gluteal intramuscular injection with 25% of patient recording no clinical improvement at all.[5] All this points to the importance of giving extra time and caution when administering an intramuscular injection over the gluteal region.

Management of those unfortunate patients with sciatic nerve injection injury should be individualised depending on the severity of the symptoms. This includes oral analgesics, physiotherapy, use of assistive devices and in some severe cases, surgical exploration.[6]

Therefore, intramuscular injection should be avoided if safer option exists. As the authors have notice in their clinical practices, patients tend to request for intramuscular injection, favouring it over oral drugs which they find inconvenient to take or have slower mode of action. Therefore, the ethics principle of "do no harm" certainly flexes its' muscles here reminding physician to only give parental treatment if it's really necessary. Early aspiration of any ensuing haematoma may prevent more serious symptoms and therefore a strong index of suspicion should be maintained in such scenarios.

The main learning points of this article is that intramuscular injection is a common mode of treatment administered, given usually over the gluteal region which stores many important structures including sciatic nerve, which if injured may lead to even permanent paralysis of the nerve if not diagnosed early.[7,8] Therefore, medical personals administering intramuscular injection should be educated to give injection over the safest region in gluteal region i.e. upper outer quadrant and to administer it only if no other safer options exists.[7-8]

With the many risk of administering intramuscular analgesia that include bruising, infection, pain hematoma and lack of evidence for its superior efficacy expect for perhaps a faster mode of action, intramuscular injection should be reserved for those with severe acute pain such as acute gout or are unable to tolerate oral analgesia, among others.[7-8]

Conclusion

In conclusion, this was an interesting case of incidental right sciatic nerve injury which brought much misery to the unfortunate patient. However quick and decisive action by the physician prevented more dire consequences such as permanent disability and brought an almost instant relieve to the patient's disabling symptoms.

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