

# Treatment injury case study

Sharing information to enhance patient safety

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EVENT: Wrong Site of Ventrogluteal Injection

INJURY: Infection

## Case Study

**32-year old Losefina presented to her General Practitioner (GP) with hip pain on movement and walking following her monthly benzathine penicillin intramuscular injection (IMI).**

Losefina had a history of rheumatic fever and so was given the monthly prophylaxis injection. On this occasion the practice nurse gave 500mg of benzathine penicillin intramuscularly. The medical notes documented that the injection was given into the right ventrogluteal (VG) site.

Losefina went back to the medical centre the next day with painful movement in the right hip while walking, and inability to fully extend her hip. On examination her GP diagnosed an infection of the right anterior trochanter because of the IMI. Her GP was of the opinion that the benzathine penicillin injection had not been given into the VG site. Losefina was further reviewed and the treatment for infection injury was prescribed.

A treatment injury claim for the infection was lodged and accepted as it is not a necessary part or ordinary

consequence of the treatment. ACC was able to assist with some of the costs of the additional treatment.

### Expert commentary

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Implicated in the presenting case study, and common in the literature, is the failure to use proper procedures in locating injection sites conceivably related to inadequate knowledge of IMIs.

IMIs have known risks that include nerve injury, infection, abscess formation, tissue necrosis, neuropathy, paralysis, haematomas, bleeding, granulomas, muscle contractures, bony injury, local irritation, pain and muscle fibrosis (3). Despite these risks, the IM route is a valuable mode of medication administration, utilised when requiring a relatively quick uptake of medication by the body with a reasonably prolonged action (4) as in the circumstances outlined in this case study where benzathine penicillin was clinically indicated. Although nurses may be well aware of IMI risks, preventable complications still occur and some of these are attributed to lack of knowledge.

Competence in the administration of IMIs is an expectation of undergraduate, enrolled and registered nurses. Given the emphasis within nursing in recent years of keeping abreast of evidence-based practice (EBP), it is not surprising that nurses are implementing the best-practice advice on IMIs (1,2) and choosing the VG site as the preferred site for administering IM medication. However, as this case study highlights, empirical knowledge and technical knowledge need to inform practice alongside EBP to ensure safe patient care.

Literature on IMIs can be contradictory and there are discrepancies among a number of texts with regard to

### Key points

- Best practice supports the ventrogluteal (VG) site as the preferred site for administering intramuscular (IM) medication
- Advantages for the VG site include
  - thickness of gluteal muscle
  - freedom from penetrating nerves and blood vessels
  - narrow layer of adipose tissue overlying the site
- Only staff who have received training with practical oversight should administer a VG intramuscular injection (IMI)

IMI technique (7). Similarly, videos readily available via the internet are not reliably accurate. Although there is some best-practice guidance in the literature, written by individual health practitioners, there are currently no IMI best-practice guidelines emanating from a formal systematic review providing authoritative direction on the topic.

Clinical decision-making is central to a nurse who holds a practising certificate. Clinical decision-making regarding IMIs should be influenced by the age of the client, the medication to be injected, the volume of medication required, the general condition of the client and the manufacturer's instructions (5).

There has been considerable discussion in nursing literature over recent years on the site of choice for IMIs (1, 2, 4). Of the five suitable sites for IMIs (deltoid, dorsogluteal, ventrogluteal, rectus femoris and vastus laterals muscles), the VG is proposed as the preferred site for routine IMIs in adults (6). Nurses, like the one in the case study, choose this site as it provides the greatest thickness of gluteal muscle, is free from penetrating nerves and blood vessels and has a narrow layer of adipose tissue overlying the site (7). These factors mean that there is less likelihood of complications and more likelihood of injecting the medication into the muscle and not elsewhere. Using anatomical landmarks to correctly identify each IM site is imperative for safe IMI practice. These should be palpated as just using visual calculations can result in a misplaced injection.

Despite the VG site being taught in undergraduate nursing programmes for many years, and additional workshops being held for experienced nurses to learn the correct techniques, the common use and confident practice of administering a VG IMI is atypical. The VG site has been historically notoriously under-utilised by nurses both internationally and in New Zealand (NZ) – with one study determining that only 9% of NZ nurses used the site (8). It is reported that many nurses do not feel confident using

the VG for IMIs in particular in relation to anatomical landmarking of the site.

Education, combined with clinical support at the coal face of practice, is vital to the successful adoption of EBP for IMIs and an associated reduction in actual or potential patient harm. To avoid complications, nurses must continuously update their knowledge and skills as part of their professional obligation to competent practice. Like any other technical skill, only staff who have received training with practical oversight should administer a VG IMI. Nurse educators and nurse leaders in both primary and secondary settings can support nurses by providing clinical education on IMIs, with practical mentorship from VG champions confident in their practice. Clinical guidelines based on a systematic review of the literature would support safe, consistent and competent IMI practice.

## References

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## Claims information

Between 1 July 2005 and 30 June 2012 ACC received 451 claims related to IMI treatment injuries, of them 287 were accepted and 152 were declined.

The most common reason for declining was no physical injury caused by treatment was able to be established.

Out of total IMI claims, less than 4 claims are related to the VG site injection treatment injuries.

## How ACC can help your patients following treatment injury

Many patients may not require assistance following their treatment injury. However, for those who need help and have an accepted ACC claim, a range of assistance is available, depending on the specific nature of the injury and the person's circumstances. Help may include things like:

- contributions towards treatment costs
- weekly compensation for lost income (if there's an inability to work because of the injury)
- help at home, with things like housekeeping and childcare.

No help can be given until a claim is accepted, so it's important to lodge a claim for a treatment injury as soon as possible after the incident, with relevant clinical information attached. This will ensure ACC is able to investigate, make a decision and, if covered, help your patient with their recovery.

## About this case study

This case study is based on information amalgamated from a number of claims. The name given to the patient is therefore not a real one.

The case studies are produced by ACC's Treatment Injury Centre, to provide health professionals with:

- an overview of the factors leading to treatment injury
- expert commentary on how similar injuries might be avoided in the future.

The case studies are not intended as a guide to treatment injury cover.

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