

Recurrent Abscesses Following An Intra Muscular Injection of Diclofenac Sodium

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ABSTRACT

Two young females and one obese male presented with multiple discharging sinuses due to recurrent injection abscesses that burst spontaneously following intramuscular (IM) injections of diclofenac sodium. These abscesses were formed in relation to repeated IM injections given in order to relieve the pain. Multiple discharging sinuses led to disfigurement of the arm that was managed by wide local excision. Skin loss was dealt with skin grafting. Learning the proper technique of administering an intramuscular injection, alternating the injection site and change of analgesic can help to minimize the possibility of these complications from tissue necrosis.

Key words Intramuscular injection, Diclofenac sodium, Recurrent abscesses, Multiple discharging sinuses.

INTRODUCTION:

The administration of IM injection is an important part of medical treatment and a common intervention. A skilled injection technique causes less pain and prevent complications.¹ Deltoid region is commonly used for IM injections. A study conducted on two groups, nursing and general practitioner, showed that the great majority used either the middle one third or the upper half of the muscle and inappropriate depths of injection. Awareness of structures which are at risk of damage from injections in the region, was poor in both the groups. Thus there is a need to establish reliable protocols for the administrations of safe and effective IM injections.² The objective to present this case series is to highlight the importance of adopting proper technique of intramuscular injection and to avoid its complications.

CASE I AND II:

Two female patients, aged 35 and 40 years presented in the Out Patient Department with multiple discharging sinuses on the right and left upper arm. These sinuses formed due to the recurrent injection abscesses. The abscesses burst spontaneously with the formation of new abscess in the adjacent area. Both patients had a history of repeated IM injection of diclofenac sodium for backache in the recent past.

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The injections were administered twice or thrice in a week, to relieve the pain, by a general practitioner. Within two month of receiving these injections they developed injection abscesses (Figure I & II). Admission was advised and counseling was done for surgery but both refused.



Figure I: Multiple discharging sinuses on right arm

CASE III:

Forty year young obese male presented with the history of repeated intramuscular injections for body ache. Within one month of receiving these injections he developed injection abscesses which burst spontaneously with the development of new abscesses in the adjacent area resulting in multiple discharging sinuses (Figure III). He was operated



Figure II: Multiple discharging sinuses on left arm



Figure III: Multiple discharging sinuses on right arm

twice for this problem but developed these abscesses again within three months following the surgery because of inadequate excision. Sinogram showed the presence of deep tract. Patient was admitted and tract was localized by methylen blue. A wide local excision was done and wound laid open. Later the skin grafting was done.

DISCUSSION:

Injection abscess is an iatrogenic infection occurring as an isolated case or as cluster outbreak. These infections occur due to contaminated injectables or lapse in sterilization protocol while pathogens such as pseudomonas, klebsiella, E. coli and S. aureus are the usual causative agents.³

Injection abscesses are the nodules of liquefied fat and muscle due to necrosis of the involved tissues. Necrosis of the muscle occurs after any IM injection

no matter what medication is injected. Forceful introduction of fluid into a closed space will cause damage, because immediate area of the needle tip is subjected to the pressure of fluid resulting in necrosis. The toxicity, amount and speed of the drug injected will influence the size of the necrotic lesion.⁴ Common complications noticed after IM injection are injection abscesses, pain, bleeding from the injection site, hematoma, recurrent injection abscess, necrosis of tissue and scar formation. Fibrous myopathy due to muscle trauma results in the replacement of muscle by fibrous tissue.⁵

It has been recommended that the deltoid region should be avoided if possible, because of the small area available for the safe IM injection. Females with same BMI have significantly thicker subcutaneous layer ($r = 0.79$ both arms) than males ($r = 0.69$ dominant arm, 0.71 non-dominant arm). In all males and females with BMI <35 , intramuscular injection could be achieved with a 25 mm long needle, whilst in females BMI >35 , a 32 mm long needle is required. The needle must enter at 90 degrees to the long axis of the humerus. Many times this problem is caused by not using a needle of sufficient length to reach the muscle. One must avoid repeated IM injections at the same site.⁶

There is a need to follow the reliable protocols for the administration of safe and effective intramuscular injections. It is important to impart formal training to all health care professionals in administering IM injections.

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