Van Sag Bil Derg
2022;15(2): 156-159

Vaka Sunumu/ Case Report

Gluteal Abscess After Intramuscular Injection

Kas İçi Enjeksiyon Sonrası Gluteal Apse

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Cited: Kalaycı T. Gluteal abscess after intramuscular injection. ***Van Sag Bil Derg*** **2022, *15*,(2) 156-159.**
https://doi.org/10.52976/van-saglik.985451.

Arrived date :20/08/2021
Accepted date: 08/01/2022
Published date: 31/08/2022

ÖZET
40 yaşında bayan hasta kas içi enjeksiyon sonrası gluteal ağrı şikayeti ile başvurdu. Hastanın ilk değerlendirmesinde sadece gluteal bölgede apse olmayan selülitli geniş bir alan vardı. Hastanın takibinin ikinci gününde ultrasonografide gluteal apse saptandı ve apse drene edilerek nekrotik doku debride edildi. Yara temizliği 10 gün boyunca günlük olarak yapıldı. Daha sonra yara, dikişlerle kısmen kapatıldı. Kalan yara ikincil iyileşme için bırakıldı. İlk ameliyattan sonraki 21. günde yara tamamen iyileşti.

Anahtar Kelimeler: Apse, Drenaj, Yara.

ABSTRACT
A 40-year-old female patient presented with the complaint of gluteal pain after an intramuscular injection. In the patient's initial evaluation, there was only a large area with cellulite in the gluteal region without an abscess. On the second day of the patient's follow-up, a gluteal abscess was detected on ultrasonography, and the abscess was drained and necrotic tissue debrided. Wound cleaning was done daily for 10 days. Then, the wound was partially closed with sutures. The remaining wound was left for secondary healing. The wound healed completely on the 21st day after the first operation.

Keywords: Abscess, Drainage, Wound.

INTRODUCTION

Intramuscular injection is a method frequently used by doctors as it provides a practical and rapid treatment response. Regardless of the injection area, two important points to be considered at intramuscular injection are to avoid direct damage to neurovascular structures and to inject intramuscularly as much as possible (Filinte et al., 2010). Due to a large amount of muscle tissue, intramuscular injection is most commonly applied to the gluteal region. In some cases, deltoid muscles are also where the injection is used.

A gluteal abscess is one of the most important complications after gluteal injection (Mishra and Stringer, 2010). A gluteal abscess occurs due to injections not made by the rules of asepsis. However, abscesses seen at the intramuscular injection site are usually sterile abscesses, and apart from the local trauma caused by the injection, the irritation properties of the drug are thought to cause abscess and necrosis. When the injected drug is released into the subcutaneous tissue instead of the muscle, its absorption is delayed, and thus more tissue reactions are observed (Kim et al., 2017).

In this case report, a gluteal abscess's diagnostic and treatment process occurred after intramuscular injection was presented.

Case presentation

A 40-year-old woman was admitted to the emergency department of Igdir State Hospital in November 2019 with gluteal pain for five days. In her anamnesis, the patient stated that a myorelaxant injection was administered in another health institution 5 days ago due to left leg sciatic pain. The patient without a history of surgery had only hypertension controlled with anti-hypertensive drugs. On evaluation, the vital findings of the patient were as follows: blood pressure: 124/75 mm Hg, the pulse rate: 108 beats per minute, oxygen saturation on room air:

97%, and body temperature: 37.9o Celsius. On abdominal physical examination, there was no pathology. In addition, there was an area with cellulitis around the injection orifice.

There was no laboratory pathology except a high C-reactive protein (CRP) level (9.58 mg/L) and elevated leukocyte count (12.1x103/mm3). On superficial ultrasonography (USG), there was no abscess area but an area with cellulitis. A computed tomography (CT) was planned for the patient to rule out the possibility of a deep-located abscess. There was no definite abscess on the CT scan (Figure 1).

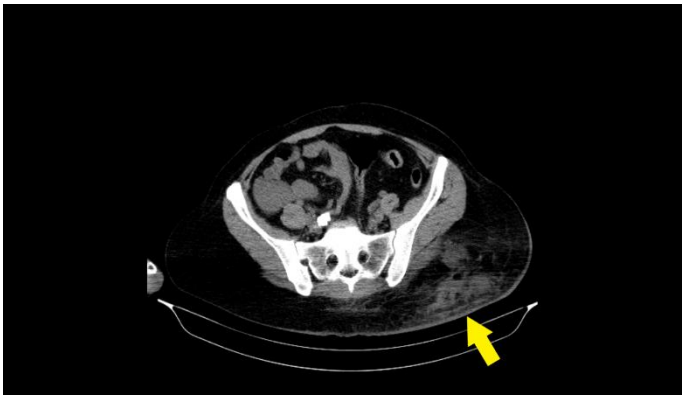

Figure 1. A 40-year-old woman was admitted to hospital with gluteal pain after intramuscular injection. A yellow arrow shows an area with gluteal infection .

Therefore, the patient was admitted for follow-up with a pre-diagnose of cellulitis, and treatment was begun using ampicillin-sulbactam 1000 mg intravenously every 12 hours and metronidazole 500 mg/100 ml every 8 hours. Two days after admission, her vital findings were as follows: blood pressure: 132/80 mm Hg, the pulse rate: 118 beats per minute, oxygen saturation on room air: 97%, and body temperature: 38.5o Celsius. At control superficial USG, there was a deeply-located abscess of 28*26 millimetres. Therefore, surgical abscess drainage was planned.

Abscess drainage was performed under general anaesthesia. Approximately 200 cc of purulent fluid came from the abscess area. A sample was taken from the abscess material and sent for culture. All necrotic tissue was removed until the clean surgical margin was reached (Figure 2). The operation area was cleaned with a mixture of hydrogen peroxide and povidone-iodine. According to the abscess culture results, ampicillin-sulbactam treatment was stopped, and piperacillin-tazobactam 4.5 grams every 6 hours vial was started. Wound cleaning was performed under sedation for 10 days. Afterwards, the wound was partially closed with sutures (Figure 3). Antibiotherapy was administered for 14 days. The wound was completely healed on the 21st day after the first surgery.

Figure 2. The image after abscess drainage and removal of all necrotic tissues.

Figure 3. The image of the wound after partial closure with sutures.

DISCUSSION

The incidence of complications after intramuscular injection varies between 0.4% and 19.3% (Mayrink et al., 2003). Problems arising from the injection are either due to local trauma caused by the injection itself or to the damaging properties of the drug. Complications after intramuscular injection are bleeding, hematoma formation, nerve damage, chronic pain, abscess formation, tissue necrosis, scar formation, joint contracture, and tumour (Treadwell, 2003).

Soft tissue infections or abscesses can be seen after gluteal injections. Patients initially present with symptoms such as erythema, oedema and pain at the injection site, which are cellulitis symptoms, and abscess formation occurs when the infection progresses. But, patients who presented to the hospital late may present with an abscess clinic.

In the diagnosis of abscess, infective laboratory parameters such as high white blood cell count and c-reactive protein level are essential in showing the disease's severity (Puthezhath et al., 2010). In addition, imaging tools such as superficial USG and CT are helpful for diagnosis. The primary purpose of imaging tools is to show the presence of an abscess in the injection area. Computed tomography can be beneficial in cases where no abscess is seen on USG and a deep-located abscess is considered. In our patient, she was admitted to the hospital with gluteal pain and erythema. Inflammatory parameters of the patient were high, and on superficial USG and CT scan, no abscess focus was seen.

In treating gluteal area infections, it is essential to perform abscess drainage as the first step in patients with abscesses. However, in patients without abscesses, antibiotherapy is the first step approach. The main microbial agents of gluteal area infections are Staphylococcus aureus and beta-hemolytic streptococcus (Bowler et al., 2001). Suitable anti-microbial therapy should be started, and the duration of antibiotherapy should be extended according to the patient's clinic (Jeng et al., 2010). In patients with worsening vital signs and increased infective parameters during follow-up, the possibility of abscess should be considered, and a diagnosis should be made with imaging tools if necessary. Since her vital signs deteriorated, control USG was taken in our patient, and the abscess was drained when an abscess was detected USG.

The primary purpose of the surgical treatment of abscesses is to open and drain all the abscess pouches and remove the necrotic tissues from the body. In addition, another critical issue is the culture examination of the abscess material and the revision of antibiotic therapy according to the culture result. The duration of antibiotic treatment should be adjusted according to the patient's clinic and the infective state of the wound. In our case, repeated surgical drainages and debridements may be required in large abscesses. Another option is to treat the wound with negative-pressure wound therapy (NPWT). The number of NPWT sessions is determined depending on the closure rate and size of the wound (Rashid et

al., 2020). However, primary closure should be performed after the wound is followed up with secondary healing at the places where NPWT is inaccessible.

Conclusion

Gluteal abscess after intramuscular injection is a severe problem for patients and doctors. Early diagnosis and drainage are essential for gluteal abscess. Depending on the size of the abscess and the wound width, appropriate antibiotic therapy after drainage is the continuation of the treatment. The wound can be closed primarily or left for secondary healing at surgical treatment.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: No financial disclosure was declared by the authors**.**

Contribution: TK contributed to designing the study and preparation of the manuscript.

Ethical Approval: Not required. Written consent was approved from the patient.

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