

# Multiple Skin Abscesses and Myofibrosis of Bilateral Lower Limbs Following Repeated Intramuscular Injection of Pentazocine with Concomitant Tuberculous Infection

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## What to Learn from this Article?

Prescription drug abuse is a major health problem across the globe. This case highlights the precaution that should be taken when prescribing inject-able opioid analgesics, such as pentazocine, as routine painkillers. Awareness of its complication is important to avoid unwanted side effects

## Abstract

**Introduction:** Prescription drug abuse is a major health problem across the globe. Various complications associated with repeated injection of pentazocine are reported in the literature, including skin fibrosis, skin abscesses and ulceration, abnormal skin pigmentation and fibrous myopathy.

**Case Report:** We present a case of 48 year male with history of pentazocine abuse. Patient developed multiple abscesses in both lower limbs with polymicrobial infection, one of them being mycobacterium tuberculosis. He also developed fibrous myopathy leading to stiff hip and knee.

**Conclusion:** This case highlights the significance of the precaution that should be taken when prescribing opioid analgesics, such as pentazocine, as routine painkillers. With free over the counter access to these drugs in India and many developing countries, awareness of this complication is important so that unwanted side effects can be avoided.

**Keywords:** Pentazocine, Multiple skin abscesses, Fibrous myopathy, Mycobacterium tuberculosis.

## Introduction

Pentazocine is a synthetic narcotic analgesic usually used for the relief of moderate to severe pain. Various complications associated with its use are reported in the literature, including skin fibrosis, skin abscesses, abnormal skin pigmentation [1, 2] and fibrous myopathy [3, 4]. Although case reports [5] and case series [6] have discussed the issues of complications with pentazocine, there are very few case reports [7] and case

series [8] from India. We present a case of pentazocine dependence who developed with multiple abscess with polymicrobial infection and fibrous myopathy leading to stiff hip and knee in both lower limbs.

## Case Report

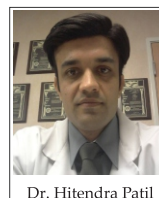
48 yr. old male presented to us with multiple draining sinuses and abscesses over both the thighs and buttocks associated

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## Author's Photo Gallery



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**Figure 1:** Initial presentation.

abscesses in thigh). In 2000 he developed abscesses over the injection sites which were drained at local hospital. Gradually he started developing stiffness in both hips and knees which has progressed to the current state where there is no range of

motion demonstrable at the patient's hips and knees. In 2005, the abscesses reappeared, subsequently drained. After that the infection was apparently quiescent till the middle of 2012 when the abscesses recurred. Patient is also diabetic (which he developed following chronic pancreatitis). Testing for viral markers (HIV/HbsAg/HCV) as a part of the routine pre-op investigations was carried out and the patient found to be sero-negative. On examination we found multiple draining sinuses over anterolateral aspect of both thighs and couple over the

buttocks. There was severe wasting of the gluteal muscles and quadriceps on both sides. Skin was leathery thick and adherent to the underlying tissues, at most places woody hard to feel. Minimal movement was present at the hips & no movements at the knees. We aimed to surgically excise all infected and necrotic tissue which amounted to excision of skin and fibrous tissue of the anterior and lateral aspect of thigh. After through debridement negative suction dressing used for both lower limbs (fig 2 & 3). Once the wound was healthy, skin grafting was done by harvesting healthy skin from the posterior aspect of the thigh (fig.4). Histopathology was suggestive of acellular myofibrosis (fig 5) with necrotizing fasciitis and micro abscesses (fig 6). The aerobic culture had grown coagulase negative staphylococcus and proteus mirabilis. He was started on injection Magnex (Cefoperazone Sodium and Sulbactam combination) for 3 weeks. The fungal culture had grown candida species for which injection amphotericin B (1mg/kg/day) was given for 14 days. At six weeks, culture grew mycobacterium tuberculosis complex. There was no past history of tuberculosis or tuberculosis contact. Culture was susceptible to all routine drugs, based on which he was started

with stiffness in both hips and knees over the past 10 years (Fig 1). Patient was a chronic alcoholic. In 1995 he had acute attack of pancreatitis. He was given intramuscular inj. of pentazocine for pain relief. Later on he got addicted to inj. pentazocine and used to take up to 10 intramuscular injections a day by himself (which explains location of

on four drug anti tubercular treatment i.e. INH(300mg), Rifampicin(600mg), Ethambutol(1000mg), Pyrazinamide(1500mg) daily for 3 months and then converted to two drug regime i.e. INH(300mg), Rifampicin(600mg) which was given for 6 months. Wounds healed well and 9 months follow up (fig 7) suggesting no re-activation/relapse of infection. One and half year later he gained developed discharge from the left thigh wound for which debridement was done. The last debridement too was sent for cultures (Bacterial, Fungal and Tubercular) which were all negative and histopathology representative of fibrous and necrotic tissue, thus reinforcing that discharge was a result of liquefaction of underlying fibro-necrotic muscle.

Following the last debridement, the wound was kept open to prevent formation of dead space and to allow granulation using VAC (Vacuum Assisted Closure). Presently the wound has almost completely healed (fig 8) except for 2 tiny anterolateral wounds which are dry and covered with fibrous tissue. No signs of infection. Plan is to observe for epithelisation. Patient continues to be mobilised with a stiff legged gait by swinging his trunk forward in the absence of flexion at hip and knee joints resulting from myo-fibrous contractures around the joints.

Numerous complications have been reported in literature i.e. skin fibrosis, skin abscesses, abnormal skin pigmentation, and fibrous myopathy. However there are no reports in literature of associated mycobacterium tuberculosis infection.

## Discussion

The common causes of multiple abscesses in legs are venous stasis ulcers, arterial ulcers, pyoderma gangrenosum, vasculitic ulcers, and malignancies. In an uncommon situation when these causes are ruled out, abuse of intramuscular injections should be considered. In the clinical

sitting of joint stiffness resulting from myofibrosis with concomitant infection, pentazocine addiction should be suspected even when history of prolonged used of intramuscular injections cannot be elicited (especially in cases of self administration of injections where patient tend to hide the abuse).

Schlicher et al. and Swanson et al. In 1971 first described the cutaneous complications of pentazocine injections and noted a 33% incidence of brown induration of skin and underlying tissues [1, 9]. The cutaneous complications include tense, woody fibrosis at



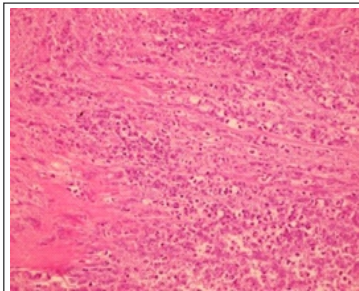
**Figure 2&3:** After two debridement and vacuum assisted closure.



**Figure 4:** After skin grafting



**Figure 5:** Acellular Myofibrosis (High Power)



**Figure 6:** Necrotising fasciitis with micro-abscesses



**Figure 7:** Nine month follow up



**Figure 8:** Current Status with no infection

the injection site, irregular punched-out abscesses with a rim of hyper pigmentation surrounding the ulcer [5, 6]. Other rarely reported cutaneous complications of pentazocine are bilateral deep vein thrombosis, toxic epidermal necrolysis, generalized erythematous desquamative rash [11], fibromyositis and contracture [7]. The exact mechanism of this condition remains elusive. It has been suggested that pentazocine is most soluble in acidic conditions and may get precipitated in the slightly alkaline pH of extracellular fluid, which then initiates a chronic inflammatory response [1]. Studies of pentazocine injection in guinea pigs have suggested that vascular ischemia attributed to the vasoconstrictive and vasoocclusive effect of pentazocine could be the cause of cutaneous changes [12].

Some authors have postulated that hormone sensitive lipase present in normal adipose tissue, when stimulated locally by pentazocine, might participate in breakdown of lipid

[6]. Personal or family history of diabetes is associated with greater risk of cutaneous complications; this is because of additive effect of pentazocine induced vasoconstriction superimposed on diabetes induced vascular changes [6] which was present in our case.

Prescription drug abuse is a major health problem across the globe [13]. Various drugs, such as analgesics, cough syrups, vitamin preparations and laxatives among others, are being used by individuals for reasons other than the medical indication. The abuse of prescriptions of opioids such as pentazocine, is being increasingly reported across globe [11] including India [13]. With free over the counter access to these drugs in India and many developing countries, awareness of this complication is important so that unwanted side effects can be avoided. Clinicians should be vigilant about the possibility of these compounds being used in this way and extra caution should be exercised when dealing with individuals with a history of substance abuse and/or dependence. This will help in preventing such drug abuse and its complications. We cannot postulate the cause of mycobacterial infection in a setting of myo-fibrosis and necrosis, but this only adds to the emphasis that the known complications in literature may not be the only complications and we may face the unexpected as demonstrated in this case.

## Conclusion

This case highlights the significance of the precaution that should be taken while prescribing opioid analgesics such as pentazocine as routine painkillers. Patients who had history of substance abuse are more likely to abuse other agents, including prescription drugs. Rare consequences such as extensive skin and soft tissue abscess and myofibrosis can cause significant lifelong disability.

## Clinical Message

Clinicians should be aware of complications of frequent intramuscular injections of pentazocine and should be vigilant about the possibility abuse of this compound and extra caution should be exercised when dealing with individuals with a history of substance abuse and/or dependence.

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