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IrriSept and the LT SplatterGuard: A 45 year-old NIDDM male with a MRSA lower leg abscess: A Case Report

Case # 49109

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Introduction: A 45 year-old Non-Insulin-Dependent Diabetes Mellitus (NIDDM) male presenting with a large right lower lateral leg methicillin-resistant *Staphylococcus aureus* (MRSA) abscess, elevated blood glucose level, and generalized malaise.

Case Presentation: A 45 year-old male presents with a right lower lateral leg abscess. It began as a possible "bug bite" seven days earlier and within two days had rapidly increased in size and become painful. His primary care physician (PCP) evaluated him. A culture was taken of the exudate. No incision and drainage (I&D) was performed. He was prescribed ciprofloxacin (Cipro) 500 mg b.i.d and trimethoprim/sulfamethoxazole (Bactrim DS) 160 mg TMP/800 mg SMX b.i.d. The patient believes that he is failing to respond to the antibiotics and it is becoming more difficult to ambulate secondary to increasing pain.

The patient presents with a 8 x 12 cm painful right lower leg abscess after six days of oral antibiotics. The abscess has 4 cm of central fluctuance with surrounding induration. His morning blood glucose is 200 mg/dL, although it typically runs 120 mg/dL. He is experiencing generalized malaise. Upon lab inquiry, the wound culture taken by his PCP reported heavy growth of MRSA with inducible clindamycin resistance, sensitive to Bactrim DS but resistant to Cipro.

Treatment Plan: Incision and Drainage (I&D) of the abscess was performed. The abscess was recultured and then cleansed with IrriSept wound debridement and cleansing system using the LT SplatterGuard per manufacturer's instructions, packed with plain gauze and followed-up at 24 hours, 48 hours, 8 days, and 14 days (at the 48 hour recheck, packing was removed). The patient was instructed to complete the trimethoprim/sulfamethoxazole prescription, but stop the ciprofloxacin. The abscess resolved without further treatment or the need for hospitalization.

Conclusion: In this case, a 45 year-old male patient with Type 2 diabetes was successfully treated as an outpatient for a ciprofloxacin and clindamycin inducible resistant MRSA leg abscess. An I&D procedure was performed followed by cleansing and debridement of the abscess pocket with IrriSept, using the LT SplatterGuard. This MRSA abscess resolved as an outpatient and required no hospitalization, nor the need for intravenous antibiotics or further treatment.

Treatment Day

24 hours

48 hours

8 days

14 days

Introduction: Skin abscesses may occur spontaneously or as a result of tissue injury in otherwise healthy individuals. They are typically infected with *staphylococcus aureus*.[i] Patients with diabetes have a four-fold increased risk of MRSA skin and soft-tissue infections.[ii,iii] The following is a case report of a 45 year-old male with NIDDM presenting with a right lower lateral leg abscess.

Treatment Day:

History: A 45 year-old male presented to his PCP with what he believed to be a "bug bite," received two days prior. The patient indicated that pain and swelling had increased over the two day period. His PCP cultured the wound and started the patient on ciprofloxacin and trimethoprim/sulfamethoxazole. The pain and swelling continued to increase during the following five days.

The patient believes he has not responded to antibiotics and that the wound is getting worse. The wound culture showed heavy growth of MRSA sensitive to trimethoprim/sulfamethoxazole, but resistant to ciprofloxacin with inducible clindamycin resistance. The patient has no fever or chills. The pain is worse when he walks and improves with rest. His pain is a 10 on a 0-10 scale. The patient has Type 2 diabetes controlled with oral medications. His morning blood glucose was 200 mg/dL, although it typically runs 120 mg/dL. The patient reports feeling "run down" since the wound appeared.

Significant Medical History: sleep apnea, hyperlipidemia, hypertension, dermatitis, arthritis, Type 2 diabetes, allergy to Penicillin

Additional Medications: Metformin, pioglitazone, atorvastatin, and lisinopril

Physical Exam: Well-demarcated 8 x 12 cm area of erythema 3+ (Figure 1). Warm to touch. No exudates. Area of center fluctuance (4+) with some minor scabbing. Induration approximately 3cm surrounding fluctuance. Circular fluctuant pocket approximately 4.0 cm.

Figure 1: Right lower lateral leg abscess after 6 days of oral antibiotics

X-Rays: Two view extremity X-rays were taken. The images illustrated soft tissue swelling but no other abnormality.

Treatment: The area was prepped with 4% chlorhexidine gluconate and 70% alcohol. The skin over the abscess was anesthetized with subcutaneous skin wheel with 1% lidocaine (without epinephrine) using a syringe and a 27-gauge needle. A number 11 scalpel was used to make a linear incision at the point of maximal fluctuance, immediately releasing purulent exudate. A wound culture was taken from the abscess pocket and manual pressure was applied to express the remaining exudate and facilitate potential loculation disruption. Approximately 4 cc of exudate was expressed. The wound culture was later reported to be heavy MRSA. The abscess pocket was cleansed with one bottle of IrriSept using the LT SplatterGuard. The tip was placed directly into the abscess pocket and the bottle manually compressed until the entire bottle of IrriSept was discharged. Using clean technique, the LT SplatterGuard was removed from the IrriSept bottle and attached to the IrriRinse bottle. The abscess was rinsed using the same technique, until the entire bottle of IrriRinse had been discharged. To facilitate drainage, the abscess pocket was packed with approximately 8 cm of plain ½-inch gauze and the abscess occlusively dressed. The patient tolerated the procedure well with no adverse events.

Plan: Continue Bactrim DS. The patient understands that his diabetes increases the risk of rapid systemic infection and other complications. Follow up in 24 hours.

24 hour follow-up:

The patient is seen for post I&D 24 hour follow-up evaluation. He reports feeling much improved. Although his leg is still sore, the pain is only a 3 on 0-10 scale. He has no fever or chills and reports that his blood glucose has returned to the 120 mg/dL range. He says he is feeling his "normal self."

Physical examination: Well-demarcated 8 x 12 cm area of erythema in the right lower lateral leg with approximately 2 cm of induration (Figure 2). The packing wick is still within the wound. No exudate could be expressed. Tenderness on palpation is a 3. No fluctuance or warmth.

Plan: Follow-up evaluation in 24 hours.

Figure 2: 24 hours post IrriSept treatment

48 hour follow-up:

The patient is seen for post I&D 48 hour follow-up evaluation. The patient reports pain has decreased further and is now a 1 on a 0-10 scale. He noticed minimal drainage from the wound and denies any fever or chills.

Physical Examination: No bruising, discoloration, or drainage. There is minimal tenderness upon palpation (1+) and some mild induration (1 cm). The outer border of fleeting redness is approximately 6 x 9 cm, with far less redness and irritation observed. (Figure 3) There is no warmth. The packing was removed.

Plan: Patient to return in 7 days unless condition changes.

Figure 3: 48 hours post IrriSept *(Packing removed)*

8 day follow-up:

The patient is seen for post I&D 8 day follow-up evaluation. The patient reports no pain or discharge. There is scabbing over the wound. The patient's glucose levels have remained in normal range and he has returned to his regular activities.

Physical Examination: A 1 x 0.5 cm area of scab has formed over the wound in a linear fashion. There is no exudate, discharge, or tenderness (Figure 4). The scab was intentionally removed and no exudates were observed. The tissue is viable. Nasal cultures are negative for MRSA.

Plan: Patient return for follow-up in one week. Complete the course of trimethoprim/sulfamethoxazole antibiotic.

Figure 4: 8 days post IrriSept

14 day follow-up:

The patient is seen for post I&D 14 day follow-up evaluation. Final examination reveals small 0.4 x 0.4 mm scab on the right leg. No discharge, fluctuance, pain, redness, or erythema.

Figure 5: 14 days post IrriSept

Conclusion:

In this case, a 45 year-old male patient with Type 2 diabetes was successfully treated as an outpatient for a ciprofloxacin and clindamycin inducible resistant MRSA leg abscess. An I&D procedure was performed followed by cleansing and debridement of the abscess pocket with IrriSept, using the LT SplatterGuard. This MRSA abscess was resolved as an outpatient and required no hospitalization, nor the need for intravenous antibiotics or further treatment.

[i] http://www.nlm.nih.gov/medlineplus/ency/article/007261

[ii] Stenstrom et al. Prevalence of and risk factors for methicillin-resistant Staphylococcus aureus skin and soft tissue infection in a Canadian emergency department. *CJEM*. 2009;11(5):430-438.

[iii] Groom AV, Wolsey DH, Naimi TS, et al. Community-acquired methicillin-resistant Staphylococcus aureus in a rural American Indian community. JAMA 2001;286:1201-5.

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