

IrriSept: A novel approach with multiple *Staphylococcus aureus* abscesses in a paraplegic male: A Case Report

Case #62107

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Introduction: A case report of a 63-year-old paraplegic white male that presents with multiple subcutaneous mixed MRSA and non-MRSA abscesses.

Case Presentation: A 63-year-old paraplegic white male presented with multiple upper extremity abscesses. Five months prior (March 2010), he scraped his left elbow developing a MRSA infection that led to five days of hospitalization, PICC line placement (peripherally inserted central catheter), intravenous (IV) antibiotics and surgical incision and drainage (I&D) under general anesthesia. This was followed by a 21 day admission to a nursing home for continued I.V. antibiotics administration. The total reimbursed cost for treatment was \$22,748.

The patient presents after being evaluated by his primary care doctor six days prior to this initial visit. He was started on linezolid (7 days of Zyvox) of which he has one dose remaining. While the spreading redness has slowed, the swelling, feeling of pressure, discomfort and generalized malaise had increased. In addition, new areas of redness and soreness have developed.

Plan: The patient underwent outpatient I&D of three abscesses, two on his right arm (elbow and forearm) and one on his left forearm. All were cultured and then cleansed and debrided with IrriSept using the LT SplatterGuard per manufacturer's instructions, packed with plain gauze and followed-up at 24 hours, 48 hours and six days (at the 48 hour re-check, the packing was removed, right forearm recultured and all abscesses recleansed with IrriSept). The patient was given a 10 day prescription for trimethoprim/sulfamethoxazole (Bactrim D.S.) at the 48 hour re-check. All abscesses resolved without further treatment or the need for hospitalization. His right elbow and left forearm cultures reported as "heavy" staphylococcus *aureus*, however his right forearm grew MRSA. The 48 hour reculture of the right forearm reported as "No growth". The total reimbursed cost for his outpatient treatment was \$1,301. A pictorial diary illustrates the resolution of the treated abscesses.

Conclusions: In this case, the patient had recurrent MRSA and non-MRSA abscesses that were successfully treated as an outpatient. All abscesses were cleansed and debrided with IrriSept and the 48 hour reculture was reported as "No growth". It's unlikely the one dose of linezolid post IrriSept cleansing would have eradicated the MRSA from the abscess pocket. With a "No growth" culture at 48 hours, the risk of further MRSA exposure to others from a draining abscess was reduced. Inadvertently, this case begins to define the potential cost savings when treated in this fashion (\$22,748 vs \$1,301 or a 17.49 times cost savings). This case achieved an outcome of abscess resolution without hospitalization resulting in a significant financial savings to the healthcare system.

Introduction:

Skin abscesses may occur spontaneously or as a result of tissue injury in otherwise healthy individuals. They are typically infected with *Staphylococcus aureus* or Community-Acquired Methicillin-Resistant *S. aureus* (CA-MRSA). Risk factors for CA-MRSA have been identified among certain populations that share close quarters or experience more skin-to-skin contact (for example; military recruits, athletes, prison inmates and children in day care facilities.^{1,2}) However, those that have been hospitalized or had surgery within the past year are also at increased risk for Healthcare-Associated MRSA or HA-MRSA.¹

Here we describe a case of multiple skin abscesses in a 63-year-old white male with a neuromuscular disease that has resulted in paraplegia.

August 24, 2010 – Treatment day:

The patient. The patient is a 63-year-old paraplegic white male with neuromuscular disease. While changing the wheels on his wheelchair, he scraped his hands and arms. Soon thereafter, he noticed some redness and irritation followed by increased swelling.

Five months prior (March 2010) he scraped his left elbow and developed a MRSA infection. That infection led to five days of hospitalization, I.V. antibiotics and required surgical incision and drainage (I&D) of the abscess under general anesthesia. This was followed by a 21 day admission to a nursing home for additional I.V. antibiotics. The total reimbursed cost for that treatment was \$22,748.

The patient's primary care doctor evaluated him six days ago and started him on the antibiotic linezolid (Zyvox for 7 days). While the redness has improved, the swelling, feeling of pressure, and discomfort has increased. In addition, new areas of redness and soreness have appeared. He also complains of generalized malaise.

Patient rates his pain as a 7 on a scale of 0-10. He has no fever or chills.

Examination revealed the following:

- **Right elbow.** A large, red, well-demarcated fluctuant area, raised approximately 3 cm, encompasses a large surface area (16 x 9 cm) and is warm to the touch (Figure 1). Induration of 2 cm surrounds the fluctuance but there is no exudate. Pain is a 7.
- **Right forearm.** The wound is approximately 10 cm distal to the right elbow and more medial (Figure 2). It is approximately 4 cm. This area is circular, fluctuant, and slightly raised (1 cm). It is well demarcated and is not warm to the touch. There is some mild erythema (4 x 4 cm). Pain is a 5 upon palpation. Induration of 1 cm circles the fluctuance, but there is no exudate.
- **Left forearm.** The area of erythema is about 10 cm in length by 8 cm in width, raised approximately 2 cm (Figure 3). It is firm and fluctuant. It is well demarcated from the reddened area to the fluctuance pocket. There is no tissue induration or exudate. Pain is a 7 upon palpation.

Treatment day pictorial diary:

Figure 1 Right Elbow



Figure 2 Right Forearm



Figure 3 Left Forearm



X-rays: On two views, the left forearm demonstrates soft tissue swelling; Four views of the right elbow and forearm revealed only soft tissue swelling.

Recommended treatment plan: The patient agreed to undergo an incision and drainage (I&D) followed by IrriSept DuoPak cleansing. Mandatory follow-up in 24 hours and if he failed to significantly improve he may require hospitalization and with intra-operative debridement and irrigation, as well as a PICC line placement for systemic antibiotics administration.

Procedures: All three abscess pockets were I&D'd, with a culture taken of each. After manually expressing the exudates, each abscess was cleansed with one bottle of IrriSept using the LT SplatterGuard, followed by one bottle of IrriRinse. The areas were then packed with ¼-inch plain Iodoform gauze and dressed in normal sterile fashion. The same LT SplatterGuard was reused for each abscess. There were no adverse events or reactions from the procedures. The patient notes significantly less pain.

The patient was instructed to finish his last dose of linezolid (Zyvox). No additional antibiotics were prescribed.

August 25, 2010 - 24 hour follow-up:

The patient returned for a follow-up. He said there had been no drainage from the abscesses or any other additional symptoms. The general malaise he felt is abating. Examination revealed:

- **Right elbow:** No fluctuant areas. Erythema area of the elbow is 8 x 4 cm to the extreme ends. There is no warmth, no pain, no induration, no further exudate or drainage. The packing was not removed.
- **Right forearm:** A 2 cm circular, non-fluctuant abscess with no warmth to the touch and only mild erythema (2 x 2 cm). Pain is a 2 to palpation. There is no induration, exudate, or discharge. The packing was not removed.
- **Left forearm:** 6 x 6 cm erythema raised approximately 1 cm. It is firm without fluctuance. Pain is a 0 to palpation. The wound is well demarcated and the tissue is firm. No tissue induration, exudate, or discharge. The packing was not removed.

Culture results pending.

24 Hour pictorial diary follow-up:

Right Elbow



Right Forearm



Left Forearm



August 26, 2010 - 48 hour follow-up:

The patient returned for his follow-up. Patient said he feels no warmth, tenderness, or discharge from any of the three abscesses. He notes that the general malaise he felt is gone. He expressed his disbelief at the speed at which the abscesses are resolving.

Physical examination reveals significantly reduced erythema of all abscesses.

- **Right elbow:** No fluctuant areas. Fleeting erythema area of the elbow is now patchy, 6 x 4 cm to the extreme ends. There is no warmth, induration, exudate, or drainage. Pain is 0. Packing was removed.
- **Right forearm.** No fluctuant areas. No warmth to touch. Erythema is mild and fleeting (1 x 1 cm) that surrounds the incision site. Pain is a 2 on palpation. No induration, exudate, or discharge. Packing was removed. Reculture performed.
- **Left forearm.** An area of erythema (6 x 6 cm) raised approximately 1 cm. Area is firm and well demarcated, with no fluctuance. There is no tissue induration, exudate, or discharge. Packing was removed.

After discussion with the patient, the wounds were recleansed with the IrriSept DuoPak, with ½ bottle of IrriSept and IrriRinse used on the right elbow and ½ bottle of each on the right forearm, and a full bottle of each used on the left forearm. The right forearm lesion was recultured prior to this treatment. Bandages were placed over the right elbow and right forearm incision sites. The left forearm was bandaged with Kling and 4x4 for added cushioning given that this is the area on which the crutch arm holders bump and rub when used. Additionally, the patient verbally expressed his significant concerns for reoccurrence; thus, he was prescribed trimethoprim/sulfamethoxazole b.i.d for 10 days.

Culture results pending.

48 Hour pictorial diary follow-up:

Right Elbow



Right Forearm



Left Forearm



August 30, 2010 - 6 day follow-up:

Patient returned for final follow up. He said he has had no pain, redness, swelling, or drainage in any of the three abscesses. Physical examination reveals minimal erythema of all abscesses with no fluctuant areas, warmth, induration, exudate, or drainage. The incision sites are closing without concerns. Pain is 0 for all areas.

6 Day pictorial diary follow-up:

Right Elbow



Right Forearm



Left Forearm



Laboratory data:

Culture report from August 24, 2010

Right elbow abscess: heavy staph *aureus*

Right forearm abscess: MRSA

Left forearm abscess: heavy staph *aureus*

Culture report from August 26, 2010

Right forearm abscess: No growth

Conclusion:

In this case, the patient had recurrent MRSA and non-MRSA abscesses that were successfully treated as an outpatient. All abscesses were cleansed and debrided with IrriSept and the 48 hour reculture was reported as "No growth". It's unlikely the one dose of linezolid post IrriSept cleansing would have eradicated the MRSA from the abscess pocket. With a "No growth" culture at 48 hours, the risk of further MRSA exposure to others from a draining abscess was reduced. Inadvertently, this case begins to define the potential cost savings when treated in this fashion (\$22,748 vs \$1,301 or 17.49 times cost savings). This case achieved an outcome of abscess resolution without hospitalization resulting in a significant financial savings to the healthcare system.

REFERENCES:

1. <http://www.nlm.nih.gov/medlineplus/ency/article/007261.htm>
2. <http://www.mayoclinic.com/health/mrsa/DS00735>

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