

## INTRODUCTION

In cases of necrotic arachnidism, the Brown Recluse spider is the most implicated organism. Although often delayed, treatment goals consist of minimizing inflammation, infection and most importantly tissue necrosis. It has been reported that 20% of bites will go on to develop a necrotic ulceration that may remain symptomatic for months. Surgical intervention is necessary to improve the symptoms and prevent long-term complications. We present a case with multiple brown recluse spider bites treated under a multi-disciplinary team approach with multiple debridements, graft applications, and skin flaps.

## LITERATURE REVIEW

The Brown Recluse spider is the most commonly implicated agent in the occurrence of necrotic arachnidism. According to the criteria revised by Rader et al, a 4 level classification system (putative, presumptive, probable, documented) of brown recluse spider bite probability considers geography, physical examination and seasonality. The venom in the spider contains various enzymes consisting of phospholipase D, sphingomyelinase, metalloproteases and inhibitor cysteine knot peptides. Of these, sphingomyelinase is known to cause dermonecrosis. Diagnosis is often delayed, however favorable outcomes were noted with prompt surgical debridement, broad spectrum coverage antibiotics and wound care.

## CASE STUDY

A 38-year-old female presented with pain, erythema, and edema over the bite sites of the upper and lower extremity. X-rays were unremarkable. Patient was started on Vancomycin, Cefepime, and Flagyl upon admission. MRI of the foot revealed left foot cellulitis with bone marrow edema along the 5<sup>th</sup> metatarsal. The Flagyl was discontinued as leukocytosis was subsiding and the wound was noted to be well-demarcated. She was then consented for a full thickness wound debridement and a 5<sup>th</sup> metatarsal bone biopsy. All necrotic and non-viable tissue was removed and she was started on wound vac therapy.

## TREATMENT & RESULTS



### **Clinical images:**

Image 1 & 2 show the initial presentation of the posteromedial leg and dorsal lateral foot after the Brown Recluse Spider bite.

Image 3 & 4 show the initial full thickness wound debridement and excision of necrotic tissue

Image 5 shows the application of a split thickness skin graft over the posteromedial leg wound about 1 month later

Image 6 & 7 show the wounds a few weeks after the final debridement and application of STSG and biologic graft

## TREATMENT & RESULTS CONT.

Each wound was serially debrided full-thickness, followed by an application of a wound vac for about 1 week as a bolster dressing. After 1 week, the vac was removed and daily dressing changes were performed. The 5<sup>th</sup> metatarsal bone biopsy was negative. Once the wounds were noted to be granular and free of infection, a split thickness skin graft was applied about a month later on the posteromedial leg wound and a biologic graft was applied on the lateral foot wound. Within a few weeks, the wounds were noted to heal with no underlying complications.

## DISCUSSION

Although uncommon, Brown Recluse spider bites are potentially harmful and could cause both cutaneous and systemic symptoms. Systemic treatments involve the use of antihistamines, corticosteroids, and diphenhydramine. Surgical excision and skin grafting may be necessary when the area of necrosis is extensive. In order to achieve successful results, this should not be considered in the acute phase of envenomation and only when the necrotic edge is well demarcated.

## REFERENCES

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