

Neox[®]

Neox[®] Cryopreserved Allograft in Acute Orthopedic Trauma Wounds **A Case Series**

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Trauma Case Series

Introduction

Human birth tissue possesses unique regenerative, anti-inflammatory and anti-scarring properties.¹⁻³ These innate properties have led to the clinical use of human birth tissue (Neox® 1K cryopreserved, ultra-thick amniotic membrane allograft) as a surgical adjunct to promote rapid and complete healing in a challenging wound environment. We report on the use of human birth tissue allograft in acute, traumatic wound management. In open fractures, the infection rate has been shown to range from 20.8-24.7%.⁴ This series was reviewed to determine whether the use of Neox 1K would decrease infection rates, allow for early and definitive soft tissue coverage, and decrease reoperation rates.

Methods

Here, the authors present 30 consecutive orthopedic traumatic wounds treated with Neox 1K as an adjunctive wound therapy. Of the 30 patients treated, two were lost to follow-up and one patient died. Of the remaining 28 patients, the average age and BMI were 47.5 (range 21-75) and 28.1 respectively. The types of wounds are shown in Table 1. Comorbidities are shown on Table 2. With the addition of the Neox 1K application, all patients received standard wound care protocols.

Table 1

Wound/Injury Type	# of Patients Treated
Closed calcaneal fracture	6
Fractures with acute osteomyelitis and tissue loss	5
Grade IIIB open fracture	4
Soft tissue wound	3
Closed Pilon fracture	2
Grade IIIC open fracture	2
Closed ankle fracture	2
Non-union	2
Chronic wound	2
Charcot arthropathy with osteomyelitis including soft tissue loss	1
Diabetic foot ulcer with osteomyelitis	1

Table 2

Comorbidity	# of Patients Treated
Osteomyelitis	66%
Nicotine Dependence	43%
Peripheral Vascular Disease	40%
Alcohol/Drug Dependence	37%
Diabetes	17%
Congestive Heart Failure	10%

Outcomes

On average, patients received 1.1 applications of Neox 1K to achieve wound closure/healing. Only two patients required reoperation for wound complications (7%) and only three patients required reoperation for infection (10%). A plastic surgeon was not required for closure of any of the wounds treated.

Conclusion

The use of Neox 1K as a tissue substitute allowed for early coverage and/or wound stabilization in a challenging set of patients that often require reconstructive intervention by a plastic surgeon. Furthermore, the use of Neox 1K decreased wound complications leading to a low

reoperation/readmission rate in complicated closed/open fractures in a diverse patient population. These findings are significant for both patient outcomes and hospital cost containment.

Open Wound After Tibial/Fibular Fractures

The Innate Healing Power Of Human Birth Tissue

Human birth tissue possesses unique regenerative, anti-inflammatory and anti-scarring properties.¹⁻³ These innate properties have led to the clinical use of human birth tissue (Neox 1K) as a surgical adjunct to promote rapid and complete healing in a challenging wound environment.

Case Example

A 66-year-old white male presented in the ER with Grade IIIC open tibia/fibular fractures after an automobile accident. He smoked 1.5 packs of cigarettes daily and used methamphetamines. Among the treatments he received during 11 days of hospitalization were: open reduction of internal tibia and fibular fractures, posterior tibial artery graft, lateral fasciotomy closure and a skin graft (27 x 9 cm). On day 11, he was discharged to rehab with dressing changes.

Treatment Procedure

At 3.5 weeks post injury, he presented with a large open wound. At one month post injury, the wound was irrigated and debrided and two pieces of Neox 1K (6 x 3 cm and 8 x 3 cm) were used. At two months post injury, the leg was irrigated and debrided and another 8 x 3 cm Neox 1K allograft was placed on the wound.



Area with Skin Graft

Area treated with Neox 1K

Outcomes

As the wound healed over the following months, there was a noticeable difference between the area of the leg with the skin graft when compared to that with the Neox 1K allograft, with the latter showing decreased scarring and accelerated tissue regeneration.



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4. Lack WD, Karunakar MA, Angerame AR, et al. *J Ortho Trauma*. 2015;29(1):1-6.

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