The Use of Injectable Micronized Dehydrated Amniotic/Chorionic Membrane Allograft for Shoulder Pain

Heckworth RJ, Fowler IM, Hanling SR, Tse TH and Quiko AS
Department of Anesthesiology, Naval Medical Center, San Diego, CA

INTRODUCTION

It has been estimated that up to 34% of the population suffer from shoulder pain. Steroid injections are often tried before surgery but even if positive results are obtained, the effect is usually temporary. Because of its regenerative and anti-inflammatory properties, in addition to its ability to recruit stem cells, dehydrated amniotic/chorionic membrane allograft may offer an important and intriguing minimally invasive alternative to steroids and/or surgical repair. In this 3 patient case series, injectable dehydrated amniotic/chorionic membrane allograft (AmnioFix®) was injected into the painful area of the shoulder under ultrasound guidance. All patients injected showed a remarkable improvement in subjective function and pain. MRI images were obtained pre and post injected for patient #1 and showed marked improvement in image pathology. Dehydrated amniotic/chorionic membrane allograft (AmnioFix®) may offer a minimally invasive alternative to steroids and/or surgical repair.

METHODS

Three patients with chronic rotator cuff pathology were evaluated with an MRI and focused physical examination prior to injection with local anesthetic with or without steroid at pain site. Each patient showed temporary but significant improvement from injection. Patients elected to undergo repeat injection with AmnioFix®. This was performed under ultrasound guidance with in-plane approach.

RESULTS

All cases had long term improvement post injection with AmnioFix®. Patient #1 had infraspinatus intrasubstance tear near insertion site (see MRI). After injection with AmnioFix into the defect, the patient reported full pain relief after 1 month. This complete pain relief has persisted beyond 1 year with full resumption of rigorous weightlifting. Currently, the patient is requesting injection with AmnioFix®. Patient #2 had a partial tear in the subscapular tendon/muscle junction. The patient reported 95% pain relief after 1 month. This complete pain relief has persisted beyond 1 year with full resumption of rigorous weightlifting. Currently, the patient is requesting injection with AmnioFix®. Patient #3 had significant pain with abduction and found ADLs that required putting arms over their head difficult (such as putting on a shirt or sweater). Three weeks after injection with AmnioFix, she reported complete pain relief and full return of function. Pain relief has persisted for over 1.5 years.

FIGURE 1

A: T2 sagittal image showing increased signal in the infraspinatous tendon indicating a moderate partial tear. Pre-AmnioFix injection. Red arrow points to defect in the tendon substance

B: T2 Coronal image showing intrasubstance tear in the infraspinatus tendon near the insertion site. Red arrow points to defect. Pre-AmnioFix injection

FIGURE 2

A: T2 Sagittal MRI showing improvement in infraspinatous tendon tear after AmnioFix injection

B: T2 Coronal MRI post AmnioFix injection. Tear has mostly resolved

CONCLUSION

Human amniotic membrane has been used in a variety of clinical applications for over 100 years. In vivo and in vitro studies have shown that the biochemical properties of amniotic membrane help to reduce inflammation and enhance soft tissue healing. To our knowledge, this case series represents the first report of the use of AmnioFix® for chronic shoulder pain secondary to rotator cuff pathology. Our case series demonstrates a significant reduction in pain and improvement in function in patients suffering from rotator cuff pathology after injection of AmnioFix®. Further prospective studies of AmnioFix® therapy in patients with rotator cuff injury are warranted.

REFERENCES