

Peri-operative intrabursal Viscoseal (Hyaluronan) in Arthroscopic Shoulder Surgery – a Randomised, Controlled Prospective Trial

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Introduction

Shoulder arthroscopy has become a widely used procedure for both diagnosis and treatment. It offers less surgical insult than a traditional open approach, with a correspondingly quicker recovery. However it is not an absolutely benign procedure, due both to the effects of the irrigation solution on articular cartilage metabolism as well as post-operative pain, subsequent joint immobilization & secondary stiffness.

Viscoseal (TRB Chemedica, AG) is a 0.5% isotonic solution of 1.2 Million Dalton molecular weight hyaluronan. Hyaluronans are a normal proteoglycan component of hyaline cartilage and synovial fluid, and play an important role in joint lubrication and metabolism. Hyaluronan has been proven to have short-term benefits in reducing joint pain and swelling whilst increasing mobility following knee arthroscopy.

This study aimed to see if *Viscoseal* could be used to try to improve the short and medium term outcomes of shoulder arthroscopy.

Materials & Methods

Adult patients of the senior author undergoing arthroscopic subacromial decompression were randomised into two groups. The first group received 10 mls of Viscoseal and 10 mls of 0.5% bupivacaine (local anaesthetic) injected into the subacromial bursa via the arthroscope at completion of the procedure. These patients were controlled by a matched group of patients who received 20 mls of 0.5% bupivacaine only. All procedures were performed or supervised by the senior author.

Post-operative care, physiotherapy and follow-up were the same for the two patient groups. Outcome measures included Constant-Murley scores, 4 point visual analogue pain scores (VAS) and patient satisfaction scores.

Results

The mean age of the viscoseal group was 50.5 years (24-74) and in the control group 48.9 (31-80).

The early post-operative data shows that the Viscoseal group experienced less severe pain 4 hours post-operatively than the control group, with 3.5% of the Viscoseal group experiencing severe pain compared to 23% of the control group. 29% of the patients in the control group felt no pain at 4 hours post-operatively, while none of the patients in the control group had no pain.

The Viscoseal group also required less analgesia post-operatively than the control group. 25% of the Viscoseal required no analgesia, whilst all patients in the control group required analgesia. 33.3% of the control group required opiates compared to 10.7% in the Viscoseal group.

Figure 1: Pain level at 4 hours post-op

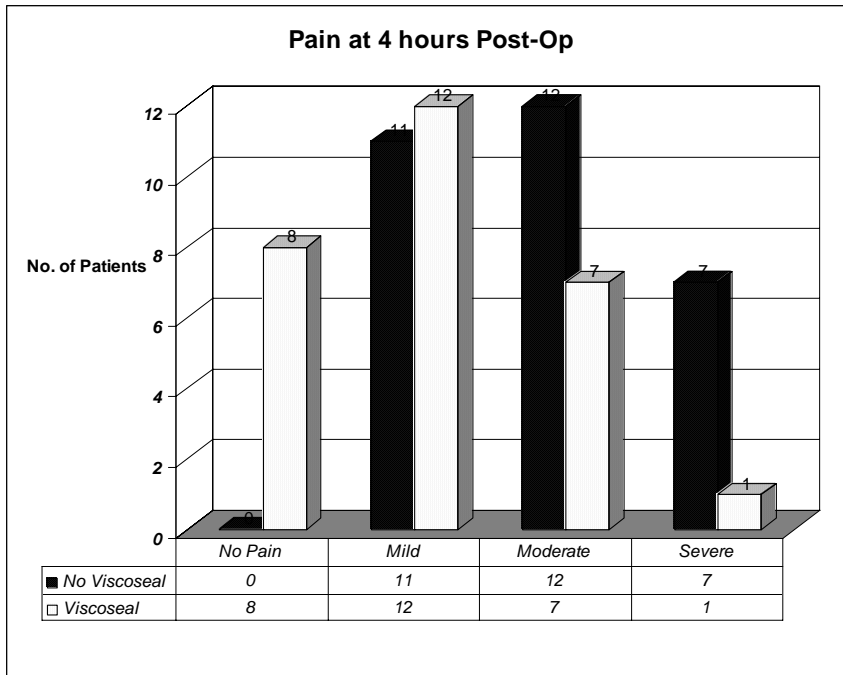
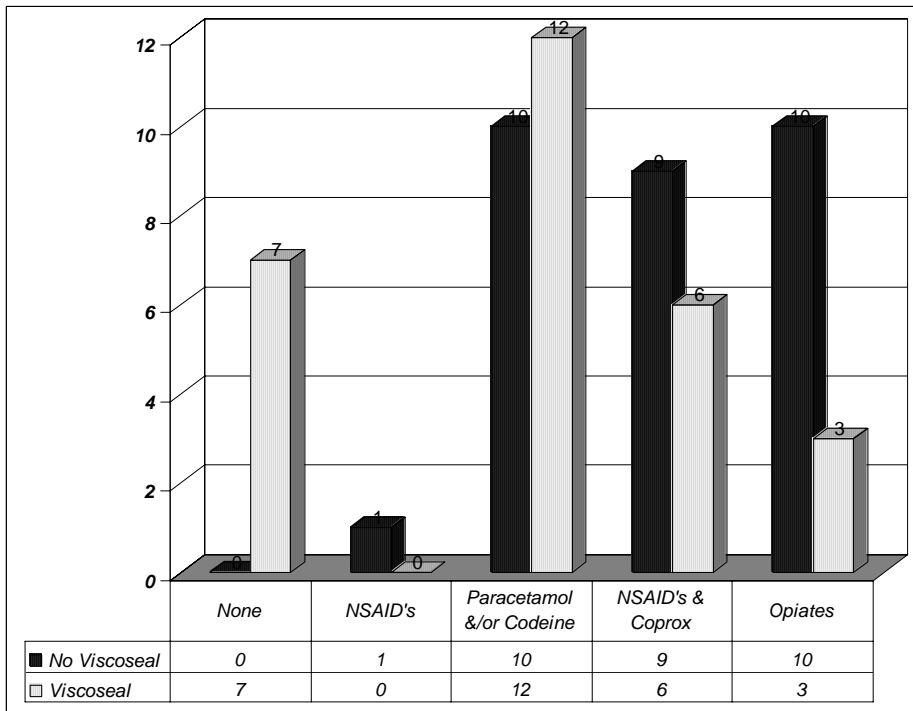


Figure 2: Strongest analgesics required within first 4 hours Post-Op:



The mean follow up was 15.2 weeks. The data is summarised in Table 1.

	Viscoseal group	Control group	Significance
Mean age (range)	50.5 (24-74)	48.9 (31-80)	
Mean Constant-Murley score change	35.4	27	P = 0.16
Mean change in VAS	1.3	1.2	P > 0.5
Mean improvement in patient satisfaction	58%	37% (12 pts)	P = 0.22
Mean improvement in elevation	17.6°	18.2°	P > 0.5

There were no adverse events in either group.

Conclusions

Patients receiving injections with Viscoseal felt less post-operative pain and required less post-operative analgesia. They were discharged twice as early as those not getting Viscoseal injections. At an average of four months post-operatively there was no difference between the two groups.

Viscoseal seems to have a useful role to play in improving early outcomes after shoulder arthroscopic surgery.