SMT for LBP

Marc-Henri Gauchat, DC, MD, Man Med (SAMM)

Sion, Switzerland

Comparison of Spinal Manipulation Methods and Usual Medical Care for Acute and Subacute Low Back Pain

A Randomized Clinical Trial

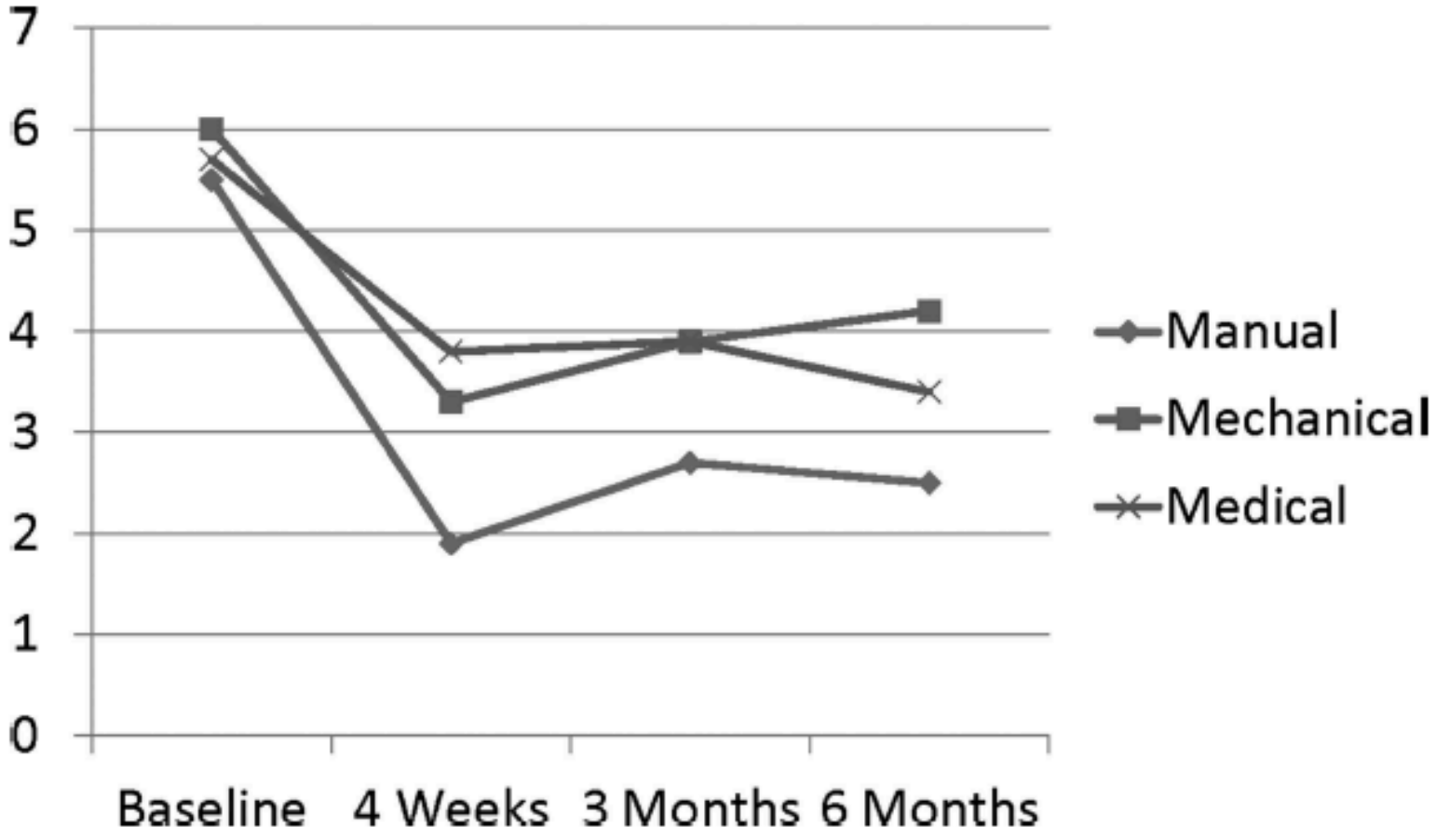
M. Schneider et al.

Spine (2015) Vol 40, No 4, pp 209-217

Key Points

- Patients in all 3 treatment arms showed clinical improvement at 4 weeks, 3 months, and 6 months.
- Significantly more patients in the manual-thrust manipulation group achieved moderate (≥30%) or substantial (≥50%) reductions in self-reported disability and pain scores at 4 weeks.

Pain rating score



Results

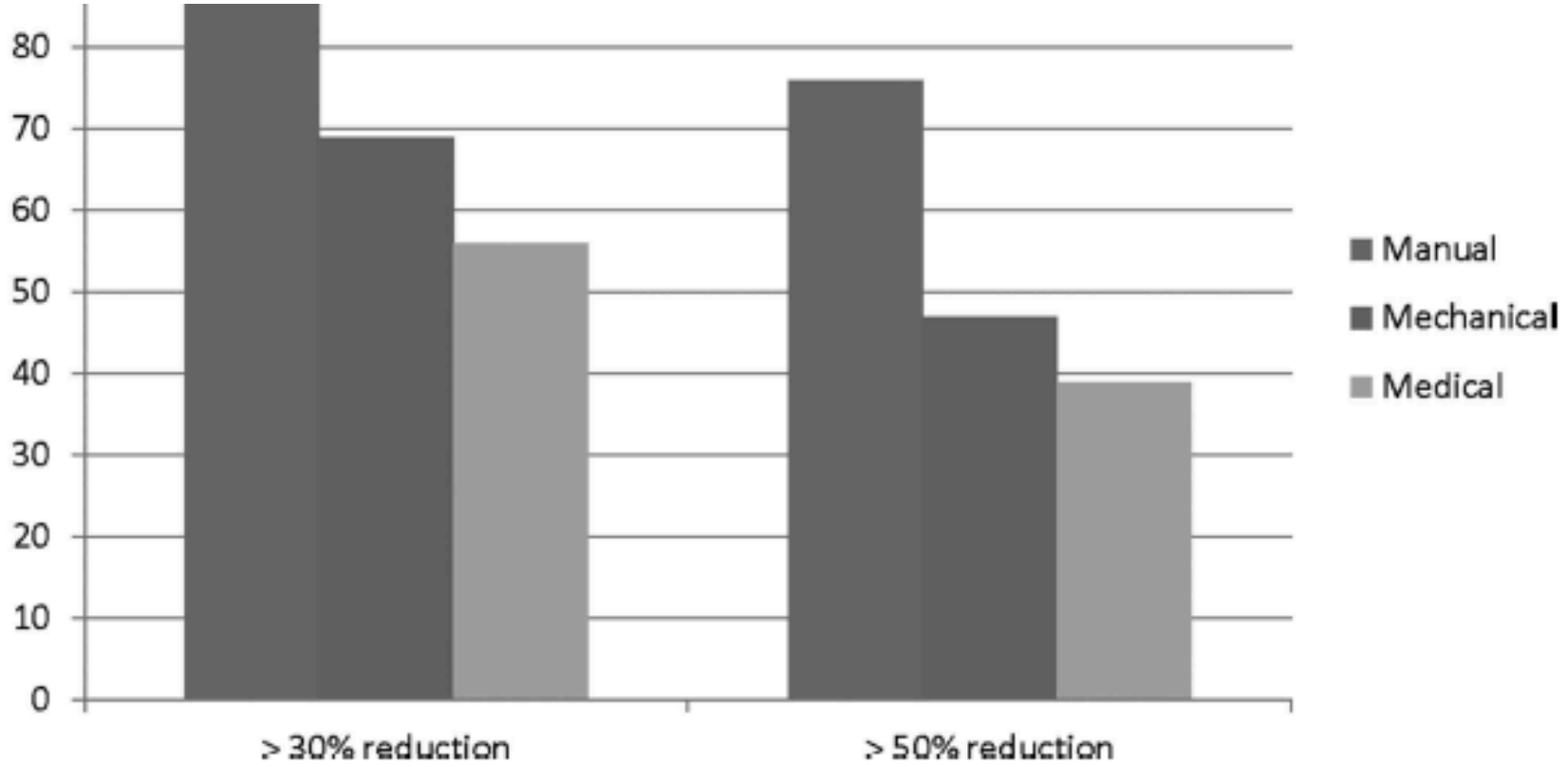


Figure 5. Bar plots showing percentages of subjects in each treatment group who had at least 30% and 50% reductions in numeric pain

Key Points

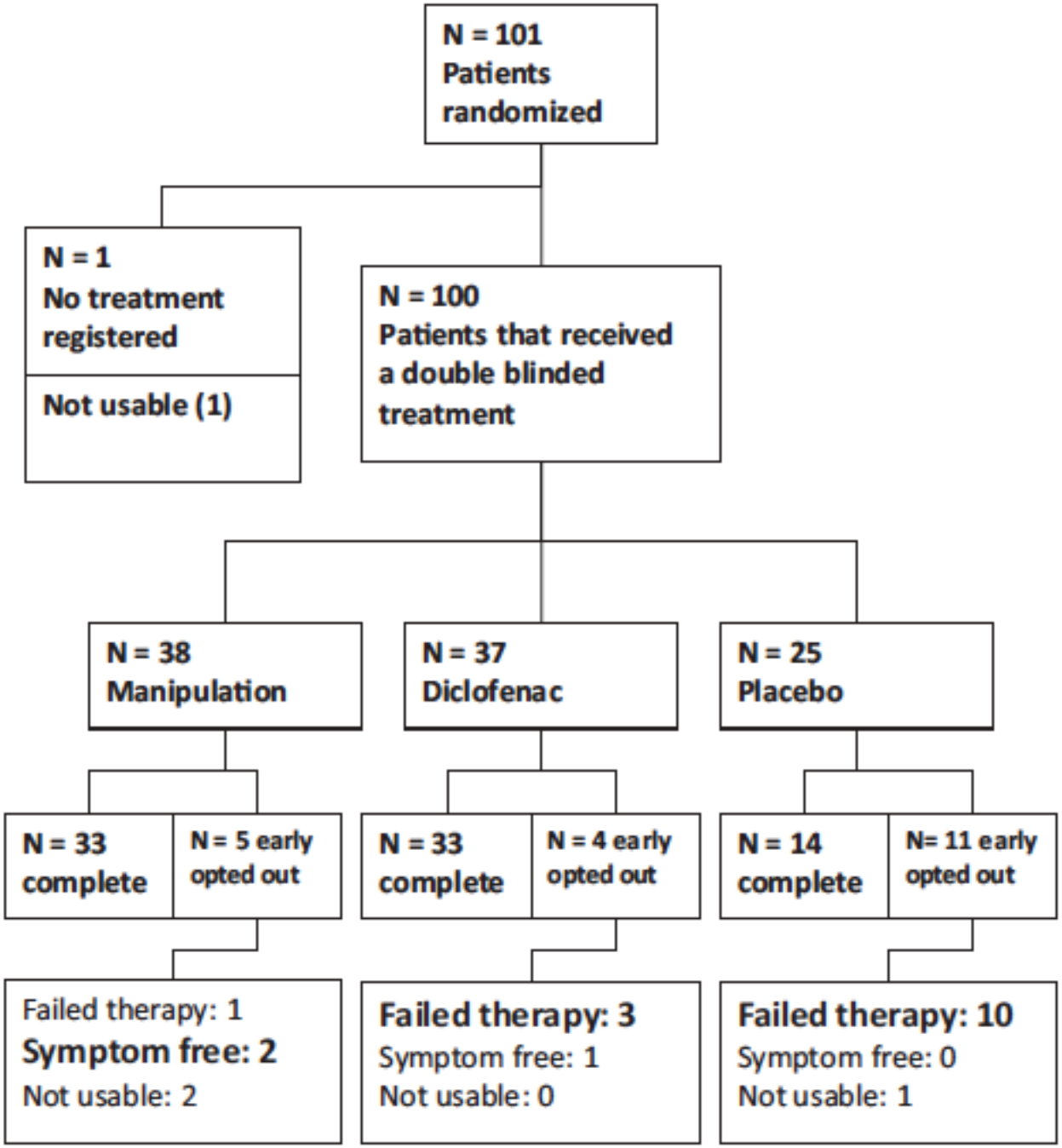
- Between-group differences are no longer statistically significant at 3 months or 6 months.
- These results contradict prior assumptions of therapeutic equivalence between manual thrust and mechanical-assisted types of manipulation.
- Manipulation is an effective treatment for short-term relief of acute and subacute LBP.

Spinal High-Velocity Low Amplitude Manipulation in Acute Nonspecific Low Back Pain

A Double-Blinded Randomized Controlled Trial in Comparison With Diclofenac and Placebo

Wolfgang J. von Heymann et al.

SPINE 2013 Volume 38, Number 7, pp 540–548


N = 101
Patients randomized
N = 1
No treatment registered
Not usable (1)
N = 100
Patients that received a double blinded treatment
N = 38
Manipulation
N = 37
Diclofenac
N = 25
Placebo
N = 33
complete
N = 5 early opted out
N = 33
complete
N = 4 early opted out
N = 14
complete
N= 11 early opted out
Failed therapy: 1
Symptom free: 2
Not usable: 2
Failed therapy: 3
Symptom free: 1
Not usable: 0
Failed therapy: 10
Symptom free: 0
Not usable: 1

Lumbar manipulation and sham manipulation

Figure 8. Position for sham-manipulation to the contralateral sacroiliac joint. Reprinted with permission from the author.

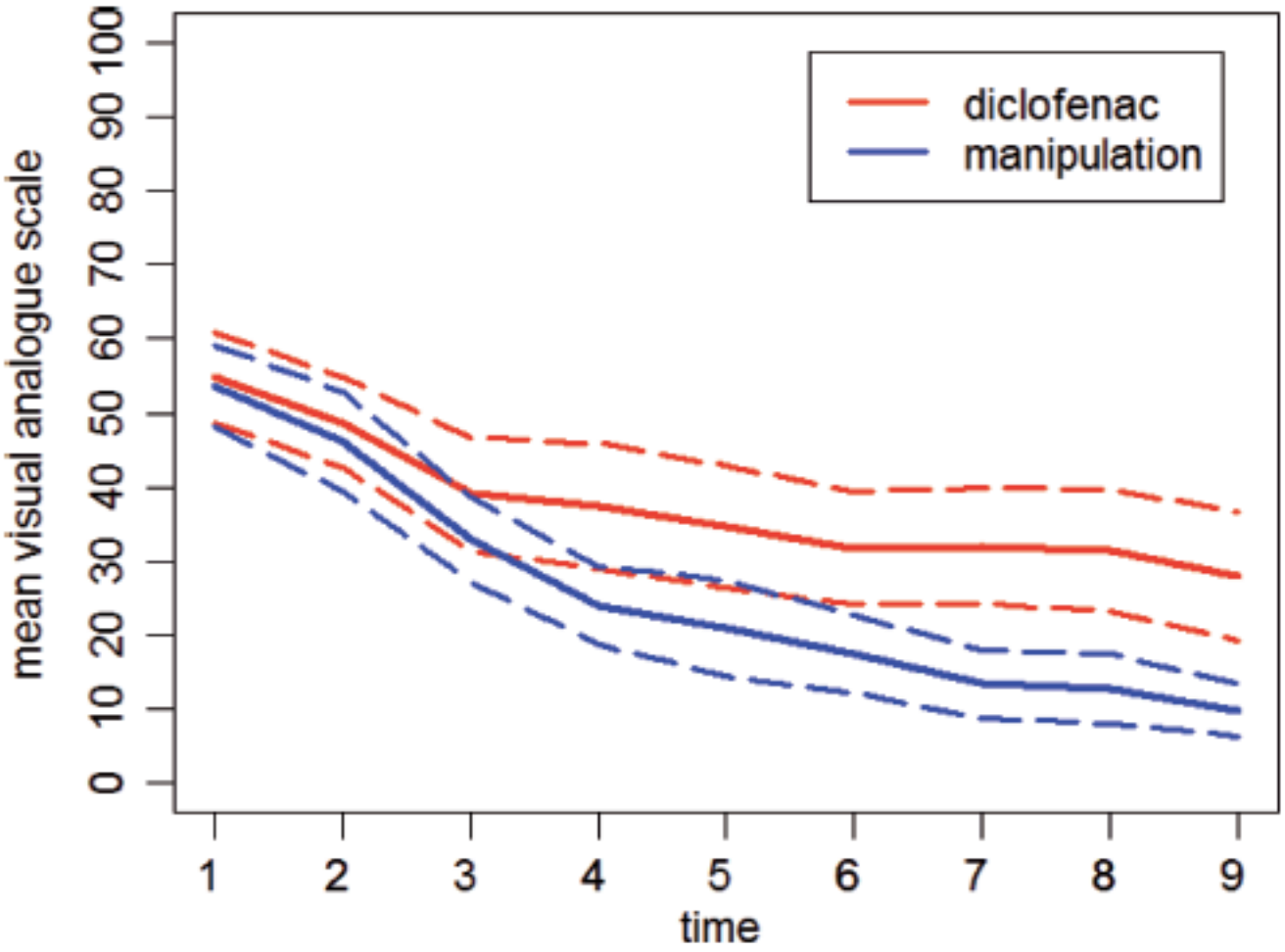


Figure 4. Mean values (± 95% confidence interval [CI]) of visual analogue scale (VAS) for pain before treatment (day 1) and thereafter up to the second investigation (days 7–9). Dotted lines indicate 95% CI.

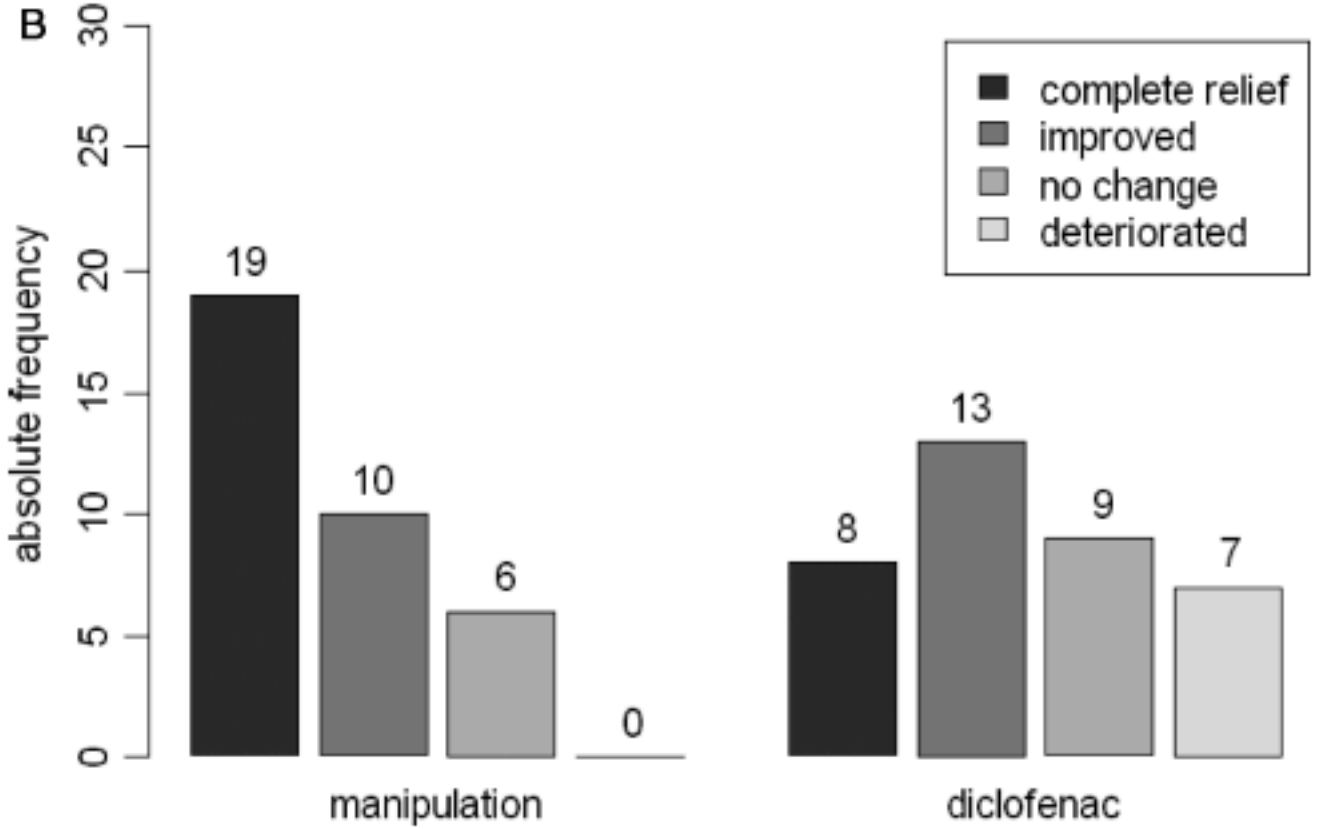


Figure 6. Comparison of the 2 active treatment groups with respect to the overall clinical impression of the blinded investigator's subjective impression of the patient. Given are absolute numbers of patients who were grouped as complete relief, improved, no change, or deteriorated. (**A**) Three days after treatment. (**B**) Seven to 9 days after treatment.

➢ Key Points

- ❑ Randomized controlled trial on acute nonspecific LBP.
- ❑ Comparison of spinal HVLA manipulation with diclofenac and rescue medication.
- ❑ A placebo group was closed for ethical reasons (pain).
- ❑ Final evaluation showed manipulation being significantly better than NSAID and clinically superior to placebo.

Real-Time Visualization of Joint Cavitation

Gregory Kawchuk et al.

(4.15.2015) PLOS ONE DOI:10.1371/journal.pone.0119470

Methods

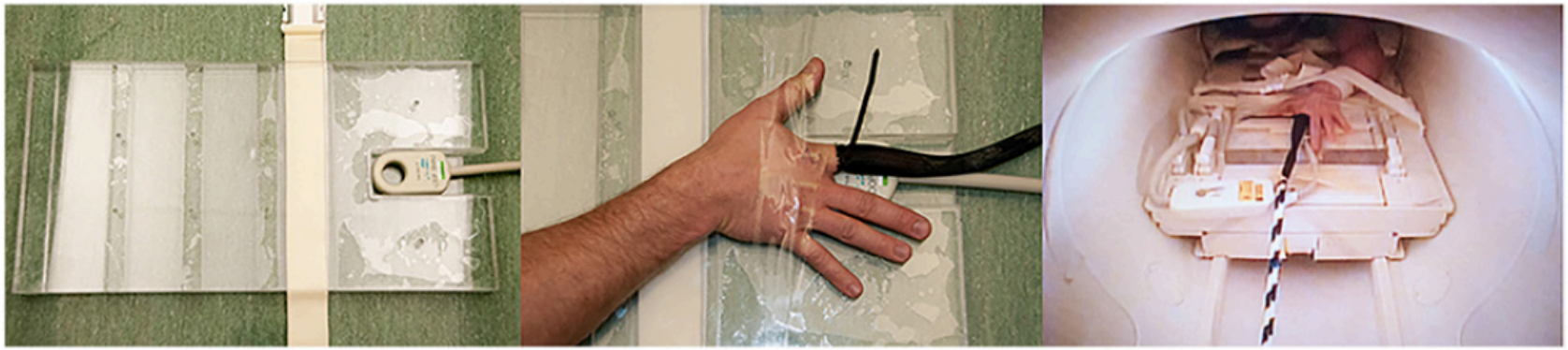


Fig 1. The radiofrequency coil inside the clear housing (left). The metocarpophaangeal (MCP) joint of interest centred over the bore of the radiofrequency coil (middle). The participant's hand within the imaging magnet (right).

MRI images

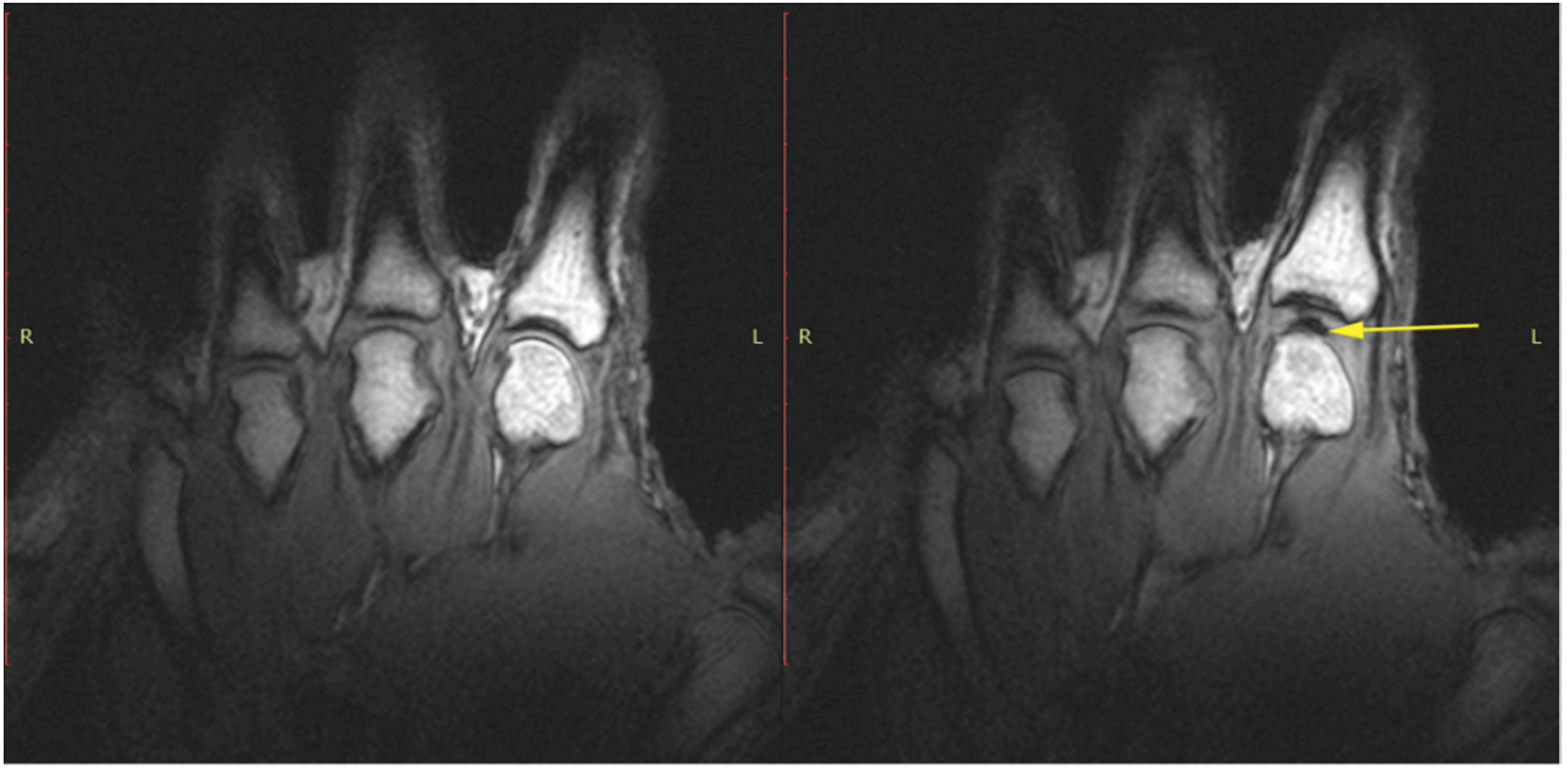


Fig 2. T1 static images of the hand in the resting phase before cracking (left). The same hand following cracking with the addition of a post-cracking distraction force (right). Note the dark, interarticular void (yellow arrow).

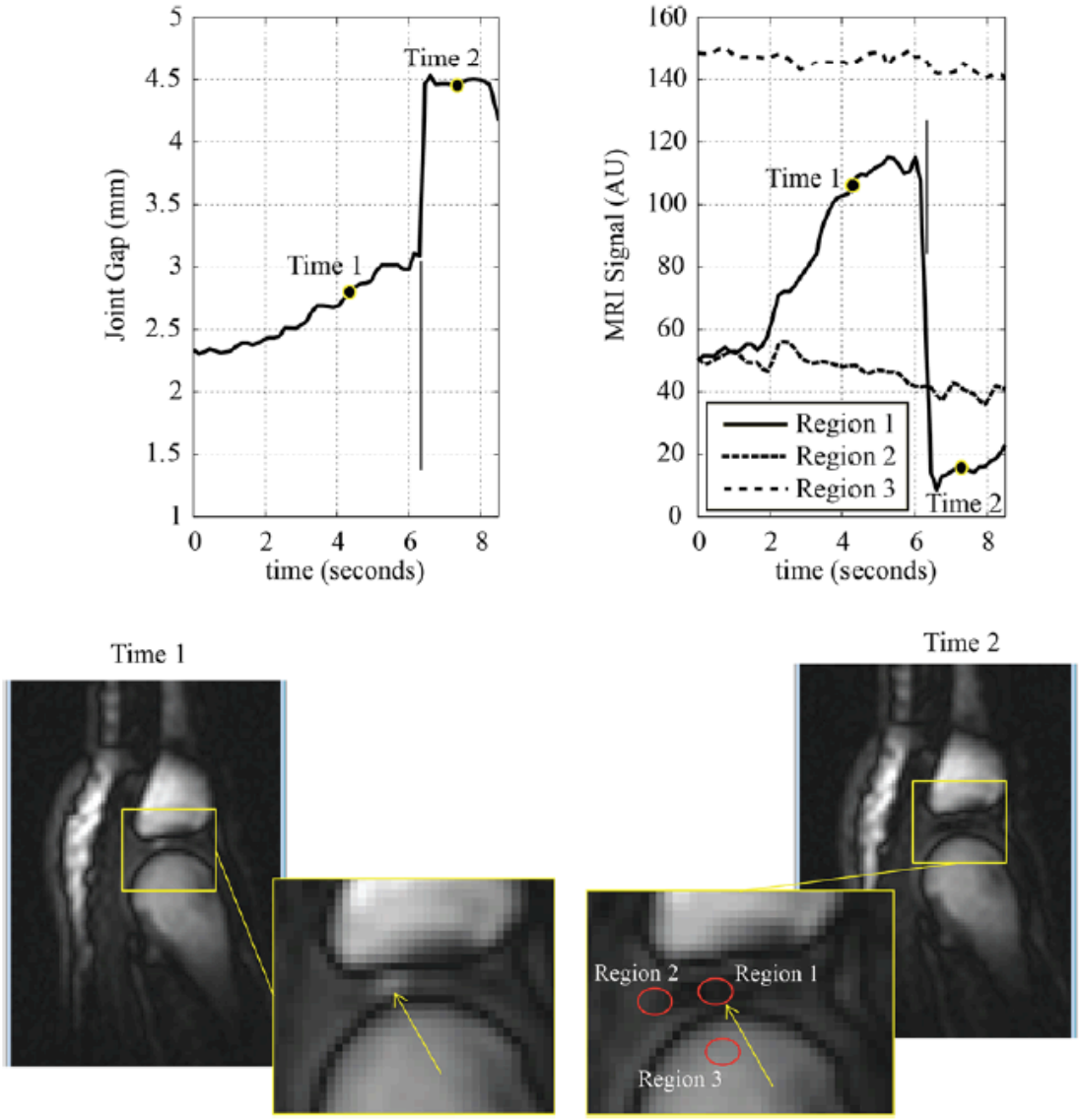


Fig 4. Time series plots for joint separation distance and signal intensity over the course of a representative MCP joint cracking (plots). Cine MRI images displayed are those immediately prior to, and after, joint cracking with zoomed regions to demonstrate areas where signal intensities were measured for the region of interest as well as control regions.

Conclusions

- Our data support the view that tribonucleation is the process which governs joint cracking.
- This process is characterized by rapid separation of surfaces with subsequent cavity formation.

Final Conclusions

- Presently, the literature in this area is confusing in that the energy produced during joint cracking is though to exceed the threshold for damage, but habitual knuckle cracking has not been shown to increase joint degeneration .
- Ultimately, by defining the process underlying joint cracking, its therapeutic benefits, or possible harms, may be better understood.