UNIVERSITÀ DEGLI STUDI DI BRESCIA

Centro R.I.T.M.O.
Ricerca e Innovazione in Traumatologia, chirurgia della Mano e Ortopedia
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ASST Spedali Civili

Efficacy of Marrow-Stimulating Technique Through Nanofractures of the Greater Tuberosity in Arthroscopic Rotator Cuff Repair

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Disclosure: COI

G. Milano

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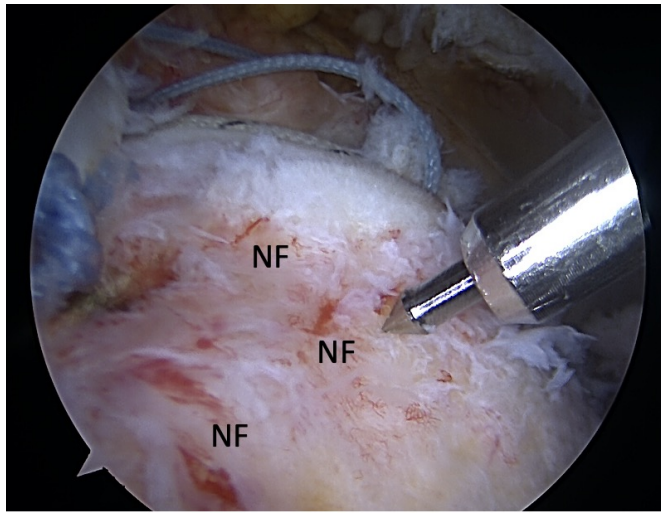
Background

Bone marrow stimulation reduces re-tear rate after rotator cuff repair

Ajrawat 2019

Microfractures

VS



Nanofractures:

Smaller & Deeper

Purpose

To evaluate the efficacy of the biological boost provided by

nanofractures of the greater tuberosity

on the healing of rotator cuff after arthroscopic repair

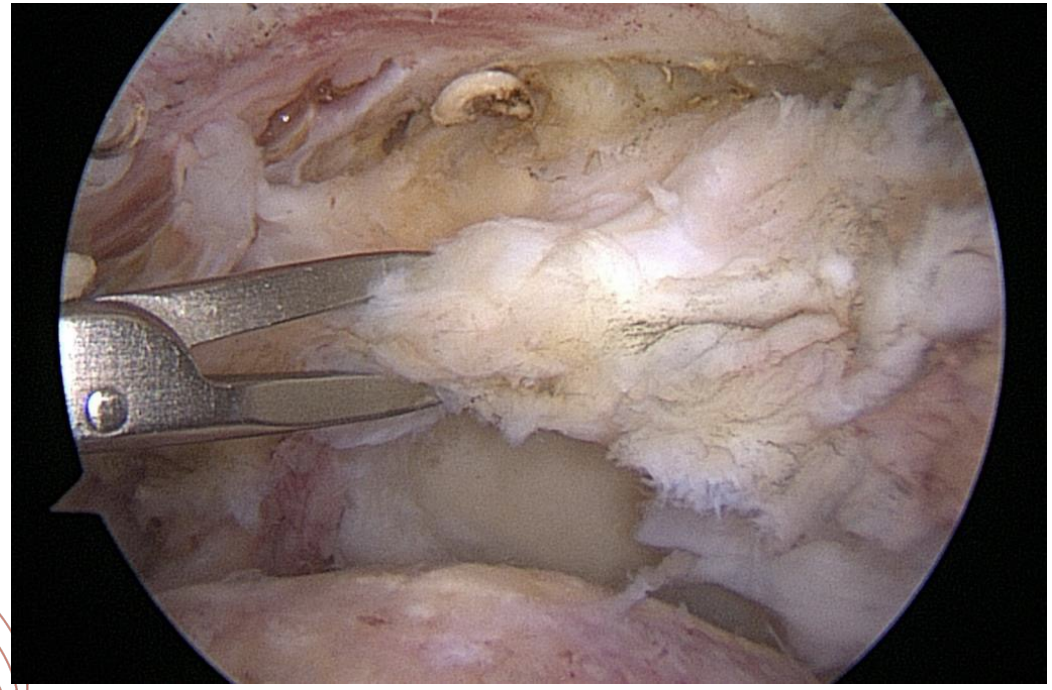
Methods

Study design: retrospective study

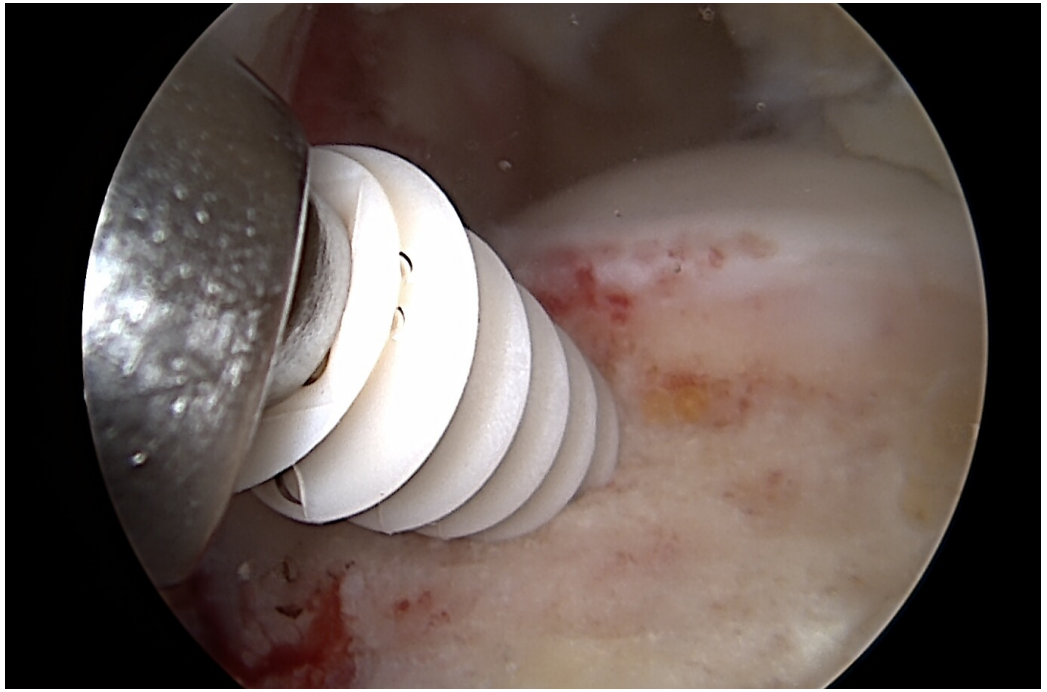
Participants

- Patients who underwent an arthroscopic repair of rotator cuff tears with nanofractures of the greater tuberosity
- Follow-up > 24 months

Surgical technique



Tear size and mobility



Rotator cuff repair

(No cortical abrasion)

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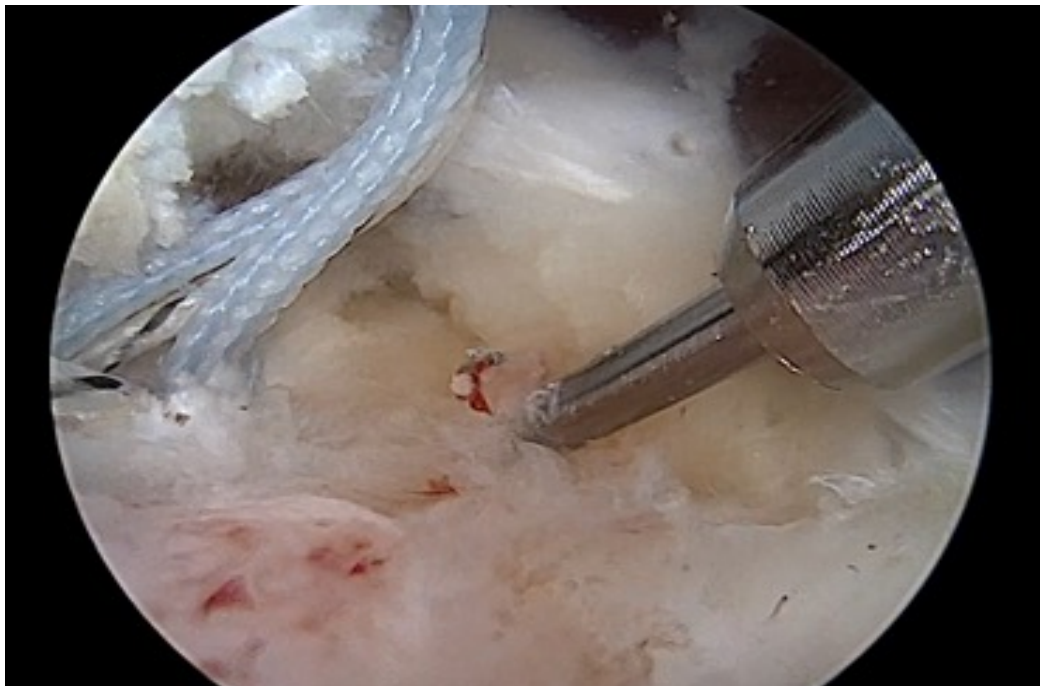
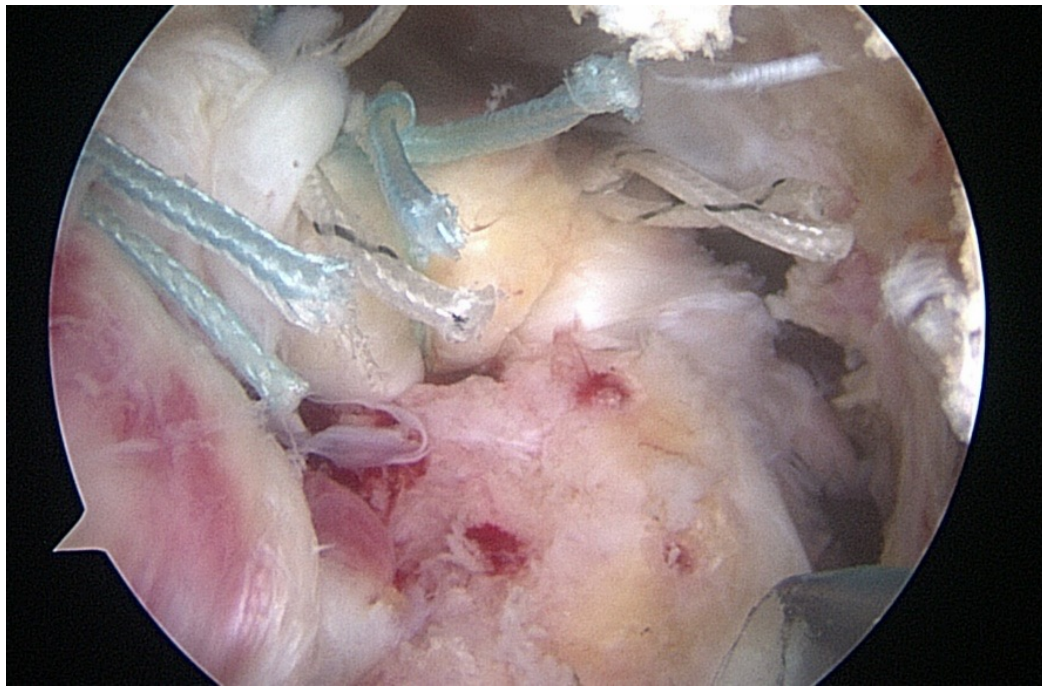
Surgical technique



Bone marrow stimulation with nanofractures



Final result

Methods

Outcome measures

- Primary: ASES score
- Secondary
  - Quick-DASH
  - WORC
  - Structural integrity (MRI) at 6 months
    - ✓ dichotomized Sugaya (I-II: healed; III-V: re-tear)

Results

- 29 patients
  - M:F= 20:9
  - Average age: 61± 6.9 y/o
- Average follow up
  - 31.5 ± 10.9 months

Baseline variables		N=29
Hand dominance	Yes N(%)	27(93.1%)
	No, N(%)	2 (6.9%)
Job description	Manual, N(%)	14(48.3%)
	Sedentary, N(%)	15 (51.7%)
Tear size	Medium, N(%)	5 (17.2%)
	Large, N(%)	10 (34.5%)
	Massive, N(%)	14 (48.3%)

Results

Comparison between pre- and postoperative functional scores

Outcome	Baseline	Follow-up	p
WORC	39 ± 17.6	94.1 ± 11.5	**< 0.0001**
Quick-DASH	51.3 ± 19.6	4.7 ± 10.3	**< 0.0001**
ASES score	50.5 ± 14.9	94 ± 14.5	**< 0.0001**

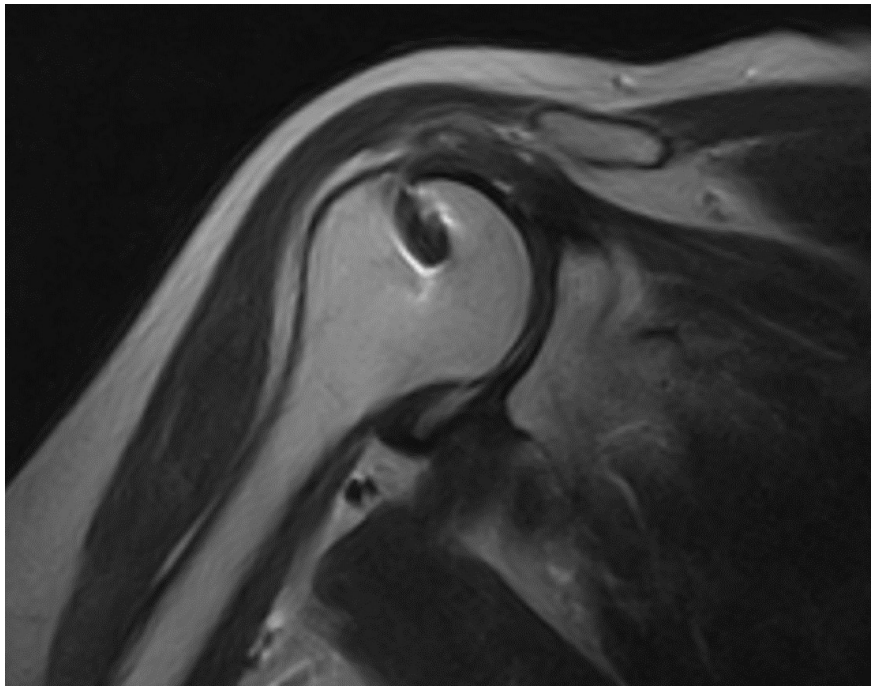
Results

Subgroup analysis for tear size

Variables		Size of the lesion			p
		Medium (N=5)	Large (N=10)	Massive (N=14)	
Quick-DASH	Mean ± SD	4.1 ± 6.9	6.4 ± 14.8	3.7 ± 7.5	0.828
WORC	Mean ± SD	94.8 ± 8.8	93.7 ± 14.3	94.2 ± 10.8	0.985
ASES	Mean ± SD	95 ± 9.4	92.8 ± 18.1	94.4 ± 14.2	0.956
Structural integrity	Healed, N (%)	5 (100%)	8 (80%)	12 (85.7%)	0.569
	Re-tear N (%)	0 (0%)	2 (20%)	2 (14.3%)	

Conclusions

Nanofractures of the greater tuberosity enhances functional and structural outcome after rotator cuff repair



LIMITATIONS:

- Retrospective study
- No control group

References

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