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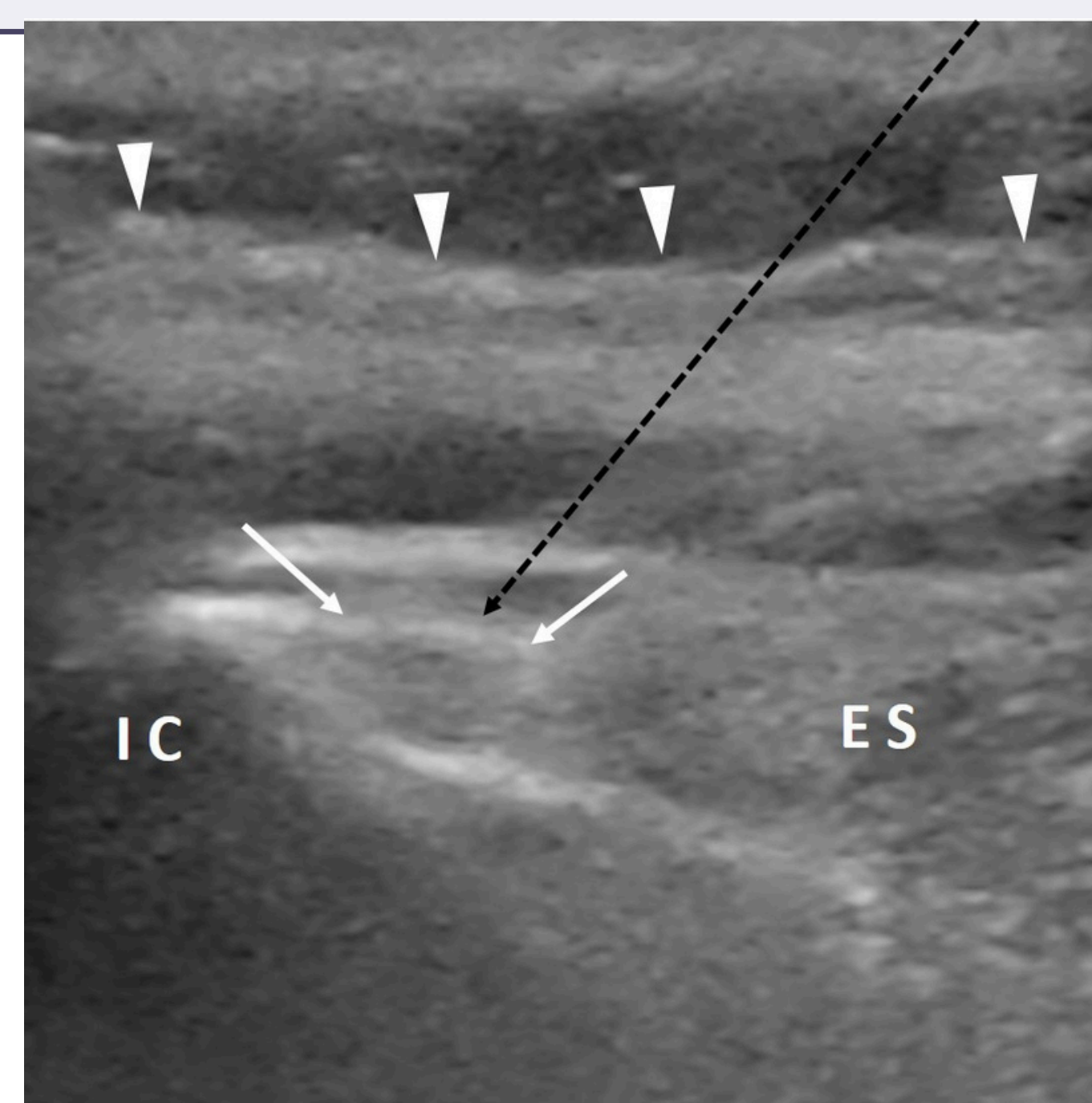
Comparison of the effectiveness of pulsed radiofrequency ablation (pRFA) of the superior cluneal nerve and conventional physical therapy in patients with chronic low back pain: A randomized, comparative study

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Introduction

Superior cluneal nerve (SCN) entrapment is an overlooked cause of chronic low back pain (CLBP). The objective of current study was to evaluate the effectiveness of pulsed Radiofrequency Ablation (pRFA) of the SCN versus conventional physical therapy (CPT) in patients with CLBP.



The hyperechoic fat pad (arrows) which contains the medial branches of the superior cluneal nerve, is shown between the posterior iliac crest (IC), the thoracolumbar fascia (arrowheads), and the lateral margin of the erector spinae (ES) muscle. The black dash-line arrow indicates the trajectory of the needle in the in-plane approach.

Methods

Current study included 25 CLBP patients, as 12 who received SCN pRFA, and 13 who received CPT. Pre-treatment, then in the 2nd week and 3rd month of follow-up, pain and disability status were evaluated with a Visual Analog Scale (VAS) score and the Oswestry Disability Index (ODI)

Methods-2

Quality of life scores were recorded according to the physical functioning and bodily pain subscales of Short Form-36 (SF-36).

Results

Both showed improvements compared to baseline. The VAS and ODI scores were significantly better in the pRFA group at the end of the 2nd week of follow-up. No significant difference was determined between the groups at the 3rd month follow-ups..

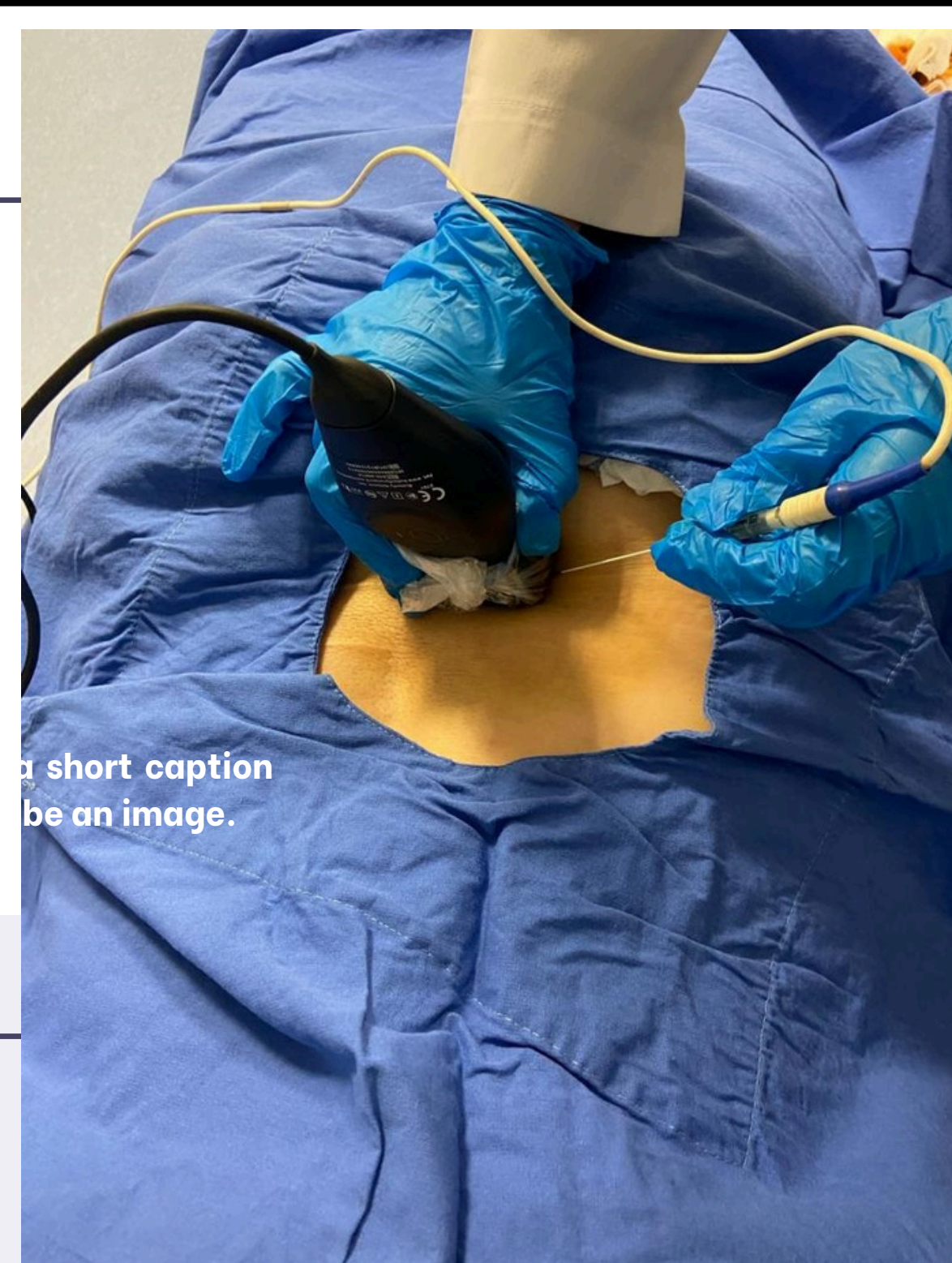
	pRFA (n=12)	CPT (n=13)	p
Gender, n (%)			0.434
Female	5 (41.7)	8 (61.5)	
Male	7 (58.3)	5 (38.5)	
Age (year)	48 (42.5-55.3)	43 (33-58.5)	0.327
BMI (kg/m2)	26.9 (24.3-30.6)	27.8 (22.3-33.1)	1.00
Education, n (%)			0.870
Primary-high school	7 (58.3)	8 (61.4)	
University	5 (41.7)	5 (38.4)	
Employment, n (%)			0.310
Housewife	4 (33.3)	5 (38.5)	
Officer	4 (33.3)	7 (53.8)	
Worker	4 (33.3)	1 (7.7)	
Marital status, n (%)			0.078
Married	11 (91.7)	8 (61.5)	
Single	1 (8.3)	5 (38.5)	
Comorbidity, n (%)	4 (33.3)	8 (61.5)	0.807
Smoking, n (%)	7 (58.3)	3 (23.1)	0.072
Duration of symptoms (week)	14 (12-24)	24 (12-24)	0.555

Table 1. Sociodemographic and clinical characteristics of the participants
Table 2. Comparison of patient pain and disability based on treatment groups.

		pRFA (n=12)	CPT (n=13)	p
VAS (rest)	Baseline	7 (6-7.8)a	6 (5-7)a	0.123
	2nd week	2 (1-2.8)b	4 (3-5)b	0.019
	3rd month	2 (0.3-6.8)b	3 (2-4)b	0.524
	p	<0.001	<0.001	
VAS (motion)	Baseline	7.5 (5.3-8)a	8 (7-9)a	0.151
	2nd week	1 (1-2)b	6 (5-6.5)b	0.018
	3rd month	1 (1-6.8)b	5 (4-6)b	0.077
	p	<0.001	<0.001	
ODI	Baseline	32 (30-37.5)a	48 (36-52)a	0.011
	2nd week	15 (8.5-20)b	32 (24-39)b	0.002
	3rd month	14 (8.5-35)b	24 (18-32)c	0.156
	p	0.001	<0.001	

		pRFA (n=12)	CPT (n=13)	p
Physical Functioning	Baseline	50 (25-66.3)	45 (37.5-65)	0.827
	3rd month	57.5(51.3-83.8)	80 (67.5-85)	0.197
	p	0.018	0.002	
Bodily Pain	Baseline	55 (45-61.3)	45 (33.8-45)	0.017
	3rd month	62.5(47.5-89.4)	67.5 (45-67.5)	0.320
	p	0.049	0.033	

Table 3. Comparison of patient quality of life (Short Form-36) based on treatment groups



Conclusion

The diagnosis of SCN is actually common but is often overlooked. Pulsed RFA may be performed in diagnosed patients for a safe analgesic effect. However, it was not seen to be superior to CPT in the mid-term.

References

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2. Kuniya H, Aota Y, Saito T, Kamiya Y, Unakoshi K, Terayama H, et al. Anatomical study of superior cluneal nerve entrapment. J Neurosurg Spine 2013;19:76-80.
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