



# Efficacy And Safety of Ultrasound-Guided Sphenopalatine ganglion block versus greater occipital nerve block in Chronic Resistant Migraine on a sample of Egyptian patients

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## Objectives:

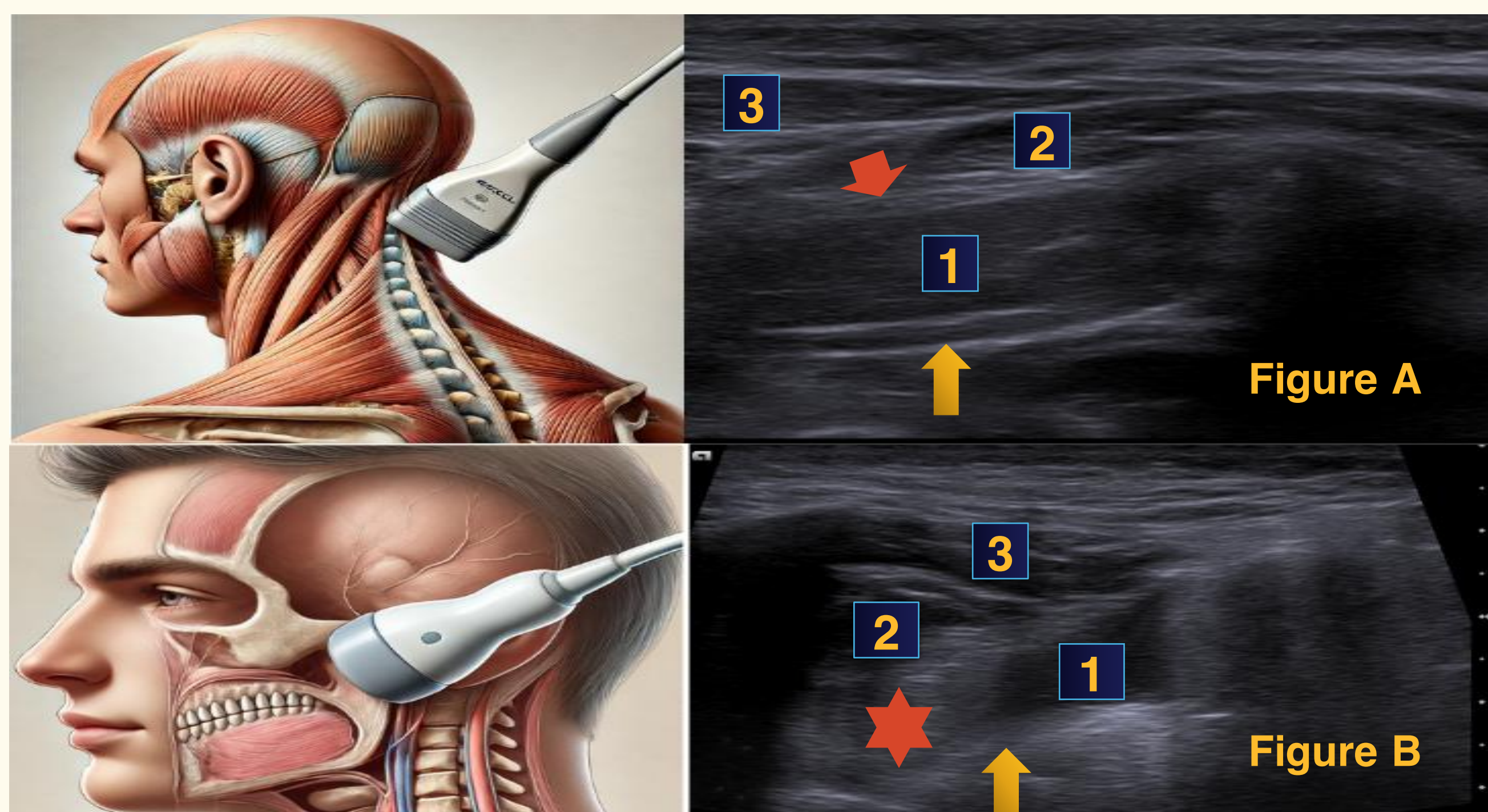
**Migraine is a common primary headache disorder** with different treatment modalities emerging as ultrasound guided peripheral nerve blocks especially for a challenging subgroup of patients; chronic resistant migraine. **We compared the efficacy and safety of ultrasound guided bilateral sphenopalatine ganglion (SPG) block versus bilateral greater occipital nerve (GON) block, in chronic resistant migraine patients.**

## Methods:

This study was an **interventional randomized controlled trial**, including **44 patients, 22 in sphenopalatine ganglion arm**, **22 in greater occipital nerve arm.**

**All patients were assessed initially by headache diary** (frequency, intensity on visual analogue scale and duration) (for 3 months), **HIT-6** and **MIDAS** scales. .

The patients (blindly allocated) underwent nerve block ultrasound guided, then followed up after one month by headache diary and HIT- 6 scale and three months by MIDAS. Results were analysed on SPSS, using mixed AVOVA and Tukey's Post-Hoc analysis.



**Figure (A):** Anatomy of the greater occipital nerve as illustrated by ultrasound transverse plane at level of C2 (live image). 1: Obliquus capitis muscle, 2: semispinalis capitis muscle, 3: splenius capitis muscle, pink arrow: the lamina of C2, red arrow: the fascia containing the GON and artery (target point)

**Figure (B):** Anatomy of the sphenopalatine fossa as seen by ultrasound transverse plane infra-zygomatic approach (live image). (A): The Coronoid process, (B): The Condylar process, (1): lateral pterygoid muscle, (2): masseter muscle, (3) temporalis muscle, (arrow): lateral pterygoid plate, (star): is the target point (SPG)

## Results:

The two groups were matched as regards the gender, age, type of migraine, frequency and years lived with headache.

The study revealed that GON and SPG block, were equally effective ( $p < 0.05$ ) as regards reducing the headache diary parameters, as well as the functional impact on HIT-6 and MIDAS scale. SPG block was more effective in patients with autonomic manifestations ( $p=0.02$ ).

		Group		One Way ANOVA
		SPG group (N= 22)	GON group (N= 22)	
		Mean $\pm$ SD	Mean $\pm$ SD	p-value
Number of Headache days	Initial	28.18 $\pm$ 0.72	28.43 $\pm$ 0.74	0.89
	Follow up	13.68 $\pm$ 1.79	15.71 $\pm$ 1.84	<0.001
Pairwise comparison	p-value	<0.001	<0.001	
Duration in hours	Initial	28.09 $\pm$ 2.23	22.43 $\pm$ 2.28	0.204
	Follow up	12.86 $\pm$ 2.57	10.92 $\pm$ 2.63	0.02
Pairwise comparison	p-value	<0.001	<0.001	
Intensity	Initial	9.09 $\pm$ 0.2	8.9 $\pm$ 0.2	0.67
	Follow up	5.14 $\pm$ 0.36	5.33 $\pm$ 0.37	<0.001
Pairwise comparison	p-value	<0.001	<0.001	

## Conclusions:

**Ultrasound guided SPG is as effective as GON as a treatment modality for chronic resistant migraine and may be more useful in the presence of autonomic manifestations.**