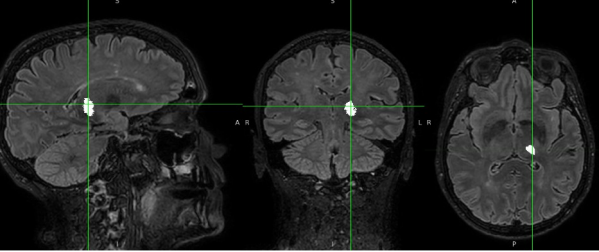


Introduction: Dejerine-Roussy syndrome is a rare condition characterized by central neuropathic pain due to a thalamic lesion (prevalence from 8 to 45 %). However, the presentation may

sometimes include atypical dysesthesias or paresthesias (1, 2).

Materials and Methods: A 68-year-old woman with a history of hypertension, dyslipidemia, and ischemic heart disease presented with tingling

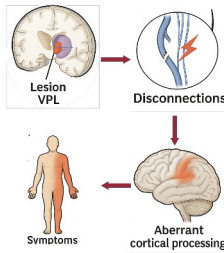
paresthesias in her right hand and right hemiface. These symptoms were caused by a subacute ischemic stroke in the left ventral posterolateral (VPL) thalamus. Approximately one month later, her facial symptoms resolved, but the tingling extended to her right leg and trunk with a mild hypoesthesia to light touch and pinprick on the right side. She also began reporting distinct and distressing dysesthesias: a "sand" sensation on the hand, "tight laces" around the right leg and arm, and a "lifebuoy" sensation involving the right hemibody.



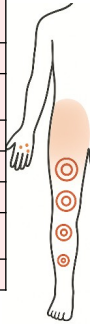
Results:

Neurological examination revealed reduced two-point discrimination on the right side of the body when assessed with an esthesiometer. Notably, sensory testing with a 10g Von Frey monofilament on her right lower limb consistently induced or exacerbated peculiar circular paresthesias. These were described as distinct circular areas of sensation that progressively increased in size when the stimulus was applied more proximally along the limb. These were described as

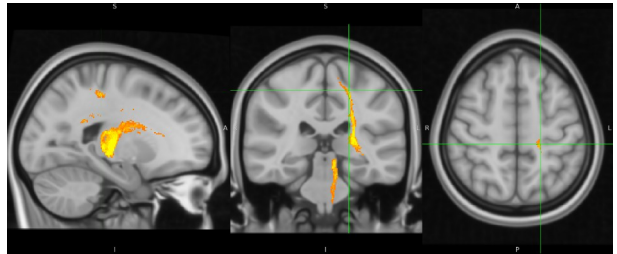
distinct circular areas of sensation the stimulus was applied more proximally along the limb.



2PDT	L (cm)	R (cm)
Fingertips	0.5	1
Palm of the hand	1	2
Forearm	≥ 9	N
Arm	≥ 9	N
Big Toe	2	2
Sole of the foot	1-2	2-3
Thigh	5-6	6-7



Structural disconnection analysis was performed using specialized MRI analysis software (BCBtoolkit and FSL), with a >90% probability threshold for tract involvement. Interesting, it highlighted the disruption of direct projections from the lesioned VPL to the ipsilateral postcentral gyrus (**primary somatosensory area**).



Discussion: this unique, stimulus-specific pattern may correspond to the known somatotopic organization of spinothalamic tract neurons within the VPL nucleus, which are arranged along a mediolateral gradient

representing the head (medial), arm (intermediate), and leg (lateral) (3).

The complex pathophysiological mechanisms responsible for central sensory symptoms due to thalamic lesions warrant continued investigation.

This report showed an atypical clinical presentation and suggests a potential role of thalamo-cortical disconnections.

Bibliography

- 1) Guédon A, Thiebaud JB, Benichi S, Mikol J, Moxham B, Plaisant O. Dejerine- Roussy syndrome: Historical cases. *Neurology*. 2019 Oct 1;93(14):624-629. doi: 10.1212/WNL.0000000000008209. PMID: 31570637.
- 2) Urits I, Gress K, Charjipova K, Othuru V, Freeman JA, Kaye AD, Cornett E, Delahoussaye PJ, Viswanath O. Diagnosis, Treatment, and Management of Dejerine-Roussy Syndrome: a Comprehensive Review. *Curr Pain Headache Rep*. 2020 Jul 15;24(9):48. doi: 10.1007/s11916-020-00887-3. PMID: 32671495.
- 3) Lepius A, Isan P, Balossier A, Mouffok S, Donnet A, Papadopolou T, Lanteri-Minet M, Regis J, Fontaine D. Somatotopy of the sensory thalamus: inputs from directional deep brain stimulation in pain patients. *Ann Clin Transl Neurol*. 2024 Jun;11(6):1502-1513. doi: 10.1002/acn3.52067. Epub 2024 Apr 26. PMID: 38686442; PMCID: PMC11167955.

