



# Numb chin syndrome — a seemingly innocent symptom that can indicate a serious disease

Dariusz Dziubek

Department of Neurology with Stroke Unit, New Medical Techniques, St. Family Specialist Hospital in Rudna Mala, Poland

**Key words:** NCS, numb chin syndrome

(*Neurol Neurochir Pol* 2024; 58 (1): 134–135)

## To the Editors

Numb chin syndrome (NCS) is a sensory neuropathy of the mental nerve manifested by paresthesias and hypoaesthesia of half of the chin and lower lip. In c.10–15% of cases, the symptoms may be bilateral. NCS was first described by Charles Bell in 1830 in a patient with disseminated breast cancer who accidentally noticed hypoaesthesia to touch on one half of her lower lip. The mental nerve is one of the terminal branches of the inferior alveolar nerve, responsible for the sensory innervation of the half of the chin and lower lip [1].

NCS is a symptom often underestimated by patients, due to its negligible impact on daily functioning. The differential diagnosis of NCS is very wide — dental causes, which account for 63% of cases, must firstly be ruled out. After excluding dental causes, the patient should be referred for oncological screening. The disseminated neoplastic process accounts for c.22% of NCS cases [2].

A 68-year-old female patient was admitted to our neurology department due to numbness in the left half of her chin and lower lip of two days' duration and periodic shortness of breath. She was being chronically treated for rheumatoid arthritis and epilepsy. The neurological examination revealed decreased sensation and numbness in the left half of the chin and the left half of the lower lip, as well as pain on percussion of the thoracic spine. CT of the head showed leukoaraiosis. X-ray of the lungs revealed single atelectatic bands in the lower field of the left lung, but otherwise no inflammatory or focal changes were found. The diagnostics was extended by chest CT, which revealed a tumour in the left lung hilum, numerous enlarged

mediastinal lymph nodes, and fluid in the left pleural cavity. In laboratory tests: ESR 62/h (n < 10/h), CRP 8.22 mg/dL (n < 0.5 mg/dL), CA-125 94 U/mL (n < 35 U/mL). An EBUS examination was performed with the collection of material for histopathological examination, in which small cell carcinoma cells were found. On the basis of the entire clinical picture and the results of additional tests, neuropathy of the left mental nerve was diagnosed in the course of a disseminated neoplastic process. The patient died within six months of diagnosis.

Malignant neoplasms metastasise to the mandible only in c.1% of cases. Of all cases of NCS caused by tumour cell dissemination, in c.47% it is the first symptom of the disease. The pathomechanism of the metastasising tendency of some tumours to the mandible is not yet fully understood. One hypothesis is that it may be due to the large amount of red bone marrow in the mandible, which favours the formation of tumour cell emboli [3]. Lung cancer very rarely causes NCS. The three most common malignancies associated with NCS are breast cancer (40.4%), lymphomas (20.5%), and prostate cancer (6.6%) [4–8].

A quick diagnosis allows cancer to be detected at an earlier stage and appropriate treatment to begin. In c.40% of patients with previously diagnosed cancer, NCS is the first symptom of disease progression or recurrence [3–5]. It is worth emphasising that a disseminated neoplastic process can cause simultaneous damage to many cranial nerves [9], and in such cases must be differentiated from facial onset sensor and motor neuropathy syndrome (FOSMN). Examination of the cerebrospinal fluid with the assessment of cytology and flow cytometry may be helpful in differential diagnosis [9, 10].

The prognosis is good if NCS is due to dental causes — then the symptoms may disappear if the causative agent is

**Address for correspondence:** Dariusz Dziubek, Department of Neurology with Stroke Unit, New Medical Techniques, St. Family Specialist Hospital in Rudna Mala, Poland; e-mail: [dariusz.dziubek@gmail.com](mailto:dariusz.dziubek@gmail.com)

Received: 30.04.2023 Accepted: 05.07.2023 Early publication date: 25.07.2023

This article is available in open access under Creative Common Attribution-Non-Commercial-No Derivatives 4.0 International (CC BY-NC-ND 4.0) license, allowing to download articles and share them with others as long as they credit the authors and the publisher, but without permission to change them in any way or use them commercially.

removed, and there is no permanent damage to the mental nerve. In oncological patients, symptoms of mental neuropathy are a very poor prognostic factor, with an average survival of c.6 months [6–8].

**Conflicts of interest:** *None.*

**Funding:** *None.*

## References

1. Sanchis JM, Bagán JV, Murillo J, et al. Mental neuropathy as a manifestation associated with malignant processes: its significance in relation to patient survival. *J Oral Maxillofac Surg.* 2008; 66(5): 995–998, doi: [10.1016/j.joms.2007.12.046](https://doi.org/10.1016/j.joms.2007.12.046), indexed in Pubmed: [18423291](https://pubmed.ncbi.nlm.nih.gov/18423291/).
2. Kalladka M, Proter N, Benoliel R, et al. Mental nerve neuropathy: patient characteristics and neurosensory changes. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2008; 106(3): 364–370, doi: [10.1016/j.tripleo.2007.12.037](https://doi.org/10.1016/j.tripleo.2007.12.037), indexed in Pubmed: [18547831](https://pubmed.ncbi.nlm.nih.gov/18547831/).
3. Soares EC, Costa FW, Rocha-Filho FD, et al. Metastatic prostate adenocarcinoma associated with numb chin syndrome. *J Craniofac Surg.* 2011; 22(6): 2366–2368, doi: [10.1097/SCS.0b013e318231e5a1](https://doi.org/10.1097/SCS.0b013e318231e5a1), indexed in Pubmed: [22134281](https://pubmed.ncbi.nlm.nih.gov/22134281/).
4. Assaf AT, Jürgens TP, Benecke AW, et al. Numb chin syndrome: a rare and often overlooked symptom. *J Oral Facial Pain Headache.* 2014; 28(1): 80–90, doi: [10.11607/jop.994](https://doi.org/10.11607/jop.994), indexed in Pubmed: [24482791](https://pubmed.ncbi.nlm.nih.gov/24482791/).
5. Smith RM, Hassan A, Robertson CE. Numb Chin Syndrome. *Curr Pain Headache Rep.* 2015; 19(9): 44, doi: [10.1007/s11916-015-0515-y](https://doi.org/10.1007/s11916-015-0515-y), indexed in Pubmed: [26210355](https://pubmed.ncbi.nlm.nih.gov/26210355/).
6. Galan Gi, Penarrocha DM. Malignant mental nerve neuropathy: systematic review. *Med Oral Patol Oral Cir Bucal.* 2008; 13(10): 616–21.
7. Joel A, Carey RA, Rajadoss JV, et al. Numb chin syndrome as a manifestation of non-small cell lung cancer. *South Asian J Cancer.* 2013; 2(4): 219, doi: [10.4103/2278-330X.119919](https://doi.org/10.4103/2278-330X.119919), indexed in Pubmed: [24455638](https://pubmed.ncbi.nlm.nih.gov/24455638/).
8. Yanagisawa S, Miyauchi E, Ichinose M. Numb Chin Syndrome: An Ominous Sign of Lung Cancer. *J Thorac Oncol.* 2017; 12(8): e114–e116, doi: [10.1016/j.jtho.2017.03.014](https://doi.org/10.1016/j.jtho.2017.03.014), indexed in Pubmed: [28748817](https://pubmed.ncbi.nlm.nih.gov/28748817/).
9. Malá E, Matějová K, Olejár T, et al. Unexpected infiltration of meninges by generalised diffuse large B-cell lymphoma manifesting as multiple cranial neuropathies in a patient with history of breast carcinoma. *Neurol Neurochir Pol.* 2021; 55(5): 499–501, doi: [10.5603/PJNNS.a2021.0049](https://doi.org/10.5603/PJNNS.a2021.0049), indexed in Pubmed: [34346054](https://pubmed.ncbi.nlm.nih.gov/34346054/).
10. Grudzińska M, Kierdaszuk B, Lipowska M, et al. Facial onset sensory and motor neuronopathy syndrome - a rare variant of motor neurone disease. *Neurol Neurochir Pol.* 2021; 55(3): 325–327, doi: [10.5603/PJNNS.a2021.0018](https://doi.org/10.5603/PJNNS.a2021.0018), indexed in Pubmed: [33559874](https://pubmed.ncbi.nlm.nih.gov/33559874/).