Dystonia involves excessive tonic muscle contractions that result in sustained or repetitive twisting movements and abnormal postures. This condition can be classified as idiopathic/primary dystonia or acquired dystonia with a causative etiology. Primary dystonia includes cases of dystonia that are induced by performing a specific task. This form of dystonia is referred to as task-specific dystonia (TSD).¹ In this report, we introduce a case of TSD associated with speaking in an occupational capacity, telemarketing.

A 41-year-old woman complained of speech-related problems during her work. She had been working in telemarketing for 7 years. Several weeks prior to her hospital visit, her jaw had protruded and turned laterally, and she had experienced imperfect articulation during her work. She used to recite the same content for 10 hours each day to explain a special policy regarding credit cards to customers. However, she now found it difficult to recite one specific sentence. No other symptom was present. She had no pertinent medical or family history.

Physical examination revealed normal results. On neurological examination, no lateralizing or localizing sign was observed. When she spoke repetitive sentences, her tongue and lower jaw showed dystonic deviation to the right to a mild degree. However, her speech was fluent, and its auditory comprehension was good. We asked her to record her symptoms during her work. In the video she provided, her jaw was turned to the right, and she subsequently touched her chin to prevent speech arrest (Supplementary Video 1 in the online-only Data Supplement). Her symptoms in her video clip were more severe than in her examination at the clinic. Sensory tricks of touching the chin temporarily improved her speech arrest. There was no dystonia in other body parts. A serological test revealed normal thyroid function with vitamin B12 and folate levels within normal ranges. Brain MRI demonstrated no remarkable findings (Figure 1). Moreover, electroencephalography revealed normal findings. We consulted the staff of the dental department who determined that her temporomandibular joint was normal.

She also complained of nocturnal bruxism that had persisted for a long time. Botulinum toxin was injected into the temporal muscle and masseters to control both the nocturnal bruxism and jaw dystonia. After injection, the bruxism was controlled, but her TSD showed no improvement.

We initially prescribed clonazepam at 0.5 mg per day to improve her chin dystonia during specific situations. However, her symptoms did not improve. Increasing the clonazepam dose to 1.5 mg was not effective. Finally, she decided to quit her telemarketing job. Subsequently, she never again experienced the TSD associated with her work. This study obtained full informed consent from the patient for publication.

A telemarketer performs a job that requires repeating the same words dozens of times a day. However, TSD caused by speech repetition in telemarketing is rare. Telemarketing is an occupation that has increased in number in recent years, and the incidence of related symptoms such as TSD may also increase. Therefore, it is necessary to consider the possibility of TSD in telemarketers who present with tongue and jaw symptoms.

TSD is an uncommon disorder. Most cases of TSD that have

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been reported consist of writer’s cramp or musician’s dystonia. Writer’s cramp represents focal hand dystonia that is induced by writing. Musician’s dystonia can be divided into the following two forms: musician’s hand dystonia and embouchure dystonia. Musicians often over-learn musical instruments. In most cases, their skilled, repetitive movements are a triggering factor for their dystonia. If focal hand dystonia manifests while the patient is playing a specific musical instrument, the disorder is considered to be musician’s hand dystonia. However, there are many forms of focal hand TSD.

Embouchure dystonia is one form of task-specific oromandibular dystonia (OMD) that affects the mouth muscles required for controlling airflow to musical instruments. Many cases of embouchure dystonia have been described. However, speech-induced task-specific OMD is not common. In our review of patients with task-specific OMD, a case related to speaking numbers was noted; this patient worked as a bingo caller in whom dystonia was induced by words (i.e., bingo numbers) and not by a sentence. A case of task-specific OMD associated with praying has also been reported. In this case, the specific prayer that induced dystonia was composed of only Arabic words, which was not only a prayer but also words in a foreign language. Dystonia in our patient manifested when she spoke sentences comprising words that were mostly in her mother tongue. Another single case of TSD in a telephone operator produced errors with certain vowels and consonants but not words or sentences. Our patient read the sentences aloud from a script that was not created by her. The supplementary video clearly demonstrates that the patient’s eyes were focused on the script. In the previously reported case, OMD occurred mainly when pronouncing a certain word rather than a sentence. Our patient differs from the previous report in that she developed OMD when speaking sentences that had meaning in her native language.

Although many hypotheses have been suggested, the mechanisms underlying TSD have not yet been established. Among the various hypotheses, impairment of the indirect pathway of the basal ganglia has been noted as a plausible mechanism. In addition, more attention has been focused on abnormal sensory function in the sensorimotor cortex. This hypothesis can explain sensory tricks, a phenomenon in which sensory input transiently improves the dystonia. This patient also showed sensory tricks, but there is a limit to explaining these clinical symptoms with a specific mechanism. Consequently, further research on the relationship among the basal ganglia, sensorimotor cortex, and cerebellum is warranted.

Several risk factors including the individual’s psychological state, performing tasks that have high task accuracy requirements and fatigue or injury of the muscles involved in TSD have been mentioned in a previous study. In this case, she had nocturnal bruxism that could be a risk factor for TSD due to muscle overuse and fatigue.

As the scope of the telemarketing business is increasing, an
increasing number of people have started working in this field. If current trends continue, the number of cases of task-specific OMD associated with telemarketing will increase. Thus, in the future, data on task-specific OMD associated with telemarketing will accumulate, and the underlying mechanisms will be elucidated.

**Supplementary Video Legends**

Video 1. She shows her chin dystonia and tongue twist when she reads certain repetitive sentences. When she put her hand on her chin for a sensory trick, her symptoms subtly improved.

**Supplementary Materials**
The online-only Data Supplement is available with this article at https://doi.org/10.14802/jmd.18030.

**Conflicts of Interest**
The authors have no financial conflicts of interest.

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