Grip myotonia

Yasutaka Yanagita , Kiyoshi Shikino , Masatomi Ikusaka

General Medicine, Chiba University Hospital, Chiba, Chiba, Japan

Correspondence to
Dr Kiyoshi Shikino;
kshikino@gmail.com

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DESCRIPTION

A 39-year-old woman presented with a 2-year history of distal lower limbs muscle weakness and bilateral finger stiffness without pain. She reported of inability to stand on her toes and relax the fingers after squeezing her hands. The symptom improved with repeated movements. The patient did not have a family history of any dystrophic myotonic syndrome. On neurological examination, the relaxation of fingers was delay after gripping (grip myotonia, [figures 1 and 2](#), and [video 1](#)) and bilateral gastrocnemius muscle weakness. Laboratory test revealed elevated creatine kinase (435 U/L) and aldolase (11.8 U/L). MRI of the lower limbs showed bilateral gastrocnemius muscles atrophy ([figure 3](#)). The electromyogram revealed complex repetitive discharges and myotonic discharge. Dystrophia myotonica protein kinase gene testing showed a cytosine-thymine-guanine (CTG) repeat expansion of 200 (normal value <35), and myotonic dystrophy type 1 (DM1) was diagnosed.

DM1 is an adult-onset muscular dystrophy that is an autosomal dominant myopathic CTG triplet disorder.¹ DM1 presents slowly progressive face,

Video 1 Grip myotonia. The patient was asked to squeeze both her hands for several seconds and suddenly release the grasp. Several seconds passed before full relaxation was achieved. The myotonia improved with repeated movements, denoting the so-called 'warm-up' phenomenon.

Figure 3 T1-weighted MRI of the lower limbs showed high intensity in bilateral gastrocnemius muscles, with a preferential involvement of the medial gastrocnemius muscles.

Figure 1 Grip myotonia. Squeezing with both of the hands for several seconds.

Figure 2 Grip myotonia. Suddenly releasing the grasp, and several seconds passing before full achieved relaxation.

neck and distal muscle weakness.² Delayed grip release after handshaking or screwing on the cap is often a helpful clue to diagnose the disease. Repeated use of the muscle can reduce the stiffness. This is known as 'warm-up' phenomenon.³ The former sign is only seen in the early stage of DM1 and disappears as the disease progresses to develop muscle atrophy.⁴

Learning points

- ▶ Myotonic dystrophy type 1 presents slowly progressive face, neck and distal muscle weakness.
- ▶ Grip myotonia is a characteristic sign even in the early stages of myotonic dystrophy type 1.

Correction notice This article has been corrected since it was first published online. The author Yasutaka Yanagita was incorrectly listed as Yasutaka Yahagita.

Twitter Kiyoshi Shikino @K

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ORCID iDs

Yasutaka Yanagita <http://orcid.org/0000-0002-9213-8247>

Kiyoshi Shikino <http://orcid.org/0000-0002-3721-3443>

REFERENCES

- 1 Pratte A, Prévost C, Puymirat J, *et al.* Anticipation in myotonic dystrophy type 1 parents with small CTG expansions. *Am J Med Genet A* 2015;167A:708–14.
- 2 Bouchard J-P, Cossette L, Bassez G, *et al.* Natural history of skeletal muscle involvement in myotonic dystrophy type 1: a retrospective study in 204 cases. *J Neurol* 2015;262:285–93.
- 3 Logigian EL, Blood CL, Dilek N, *et al.* Moxley RT 4th, Wiegner AW, Thornton CA, Moxley RT 3rd. Quantitative analysis of the "warm-up" phenomenon in myotonic dystrophy type 1. *Muscle Nerve* 2005;32:35–42.
- 4 Hogrel J-Y, Ollivier G, Ledoux I, *et al.* Relationships between grip strength, myotonia, and CTG expansion in myotonic dystrophy type 1. *Ann Clin Transl Neurol* 2017;4:921–5.

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