

POSITIVE ICE TEST IN ACUTE ANTI-GD1B NEUROPATHY

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Positive ice test in acute anti-GD1b neuropathy

A 53-year-old male presented with an acute, post-infectious sensory ataxia, generalized areflexia and left eyelid ptosis (Figure 1A). The eyelid ptosis was fatigable and indicative of neuromuscular transmission defect. The application of an ice cube over the left eyelid for 2 minutes (Figure 1B) resulted in unequivocal resolution of ptosis (Figure 1C). Cerebrospinal fluid examination revealed mild protein increase. High titer of serum anti-GD1b antibodies (Abs) was detected while anti-GQ1b, anti-GM1 and anti-GT1a Abs were negative. The diagnosis of anti-GD1b positive acute sensory ataxic neuropathy was set. Ganglioside GD1b is localized on dorsal root ganglia [1]. Neuropathy-related anti-ganglioside antibodies may target neuromuscular junction, as presynaptic membrane is ganglioside-rich and outside the blood-nerve barrier [2]. Ice test is a safe and simple bedside diagnostic tool for myasthenia gravis, with high specificity [3]. False positive ice test has been reported in Miller-Fisher syndrome with anti-GQ1b Abs [4]. This report highlights that although ice test is highly specific for myasthenia gravis, it might be positive in neuropathies with anti-ganglioside antibodies because of antibody-induced affection of the presynaptic neuromuscular junction.

Key words: ice test, neuropathy, ganglioside

Figure 1: Positive ice test



References

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