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TREATMENT OF CERVICAL DYSTONIA WITH BOTULINUM TOXIN IN A PATIENT WITH MYASTHENIA GRAVIS

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ABSTRACT - We report the case of a 49-year-old woman who has the rare combination of myasthenia gravis and cervical dystonia. She was treated with botulinum toxin type A with good response and no evidence of deterioration of the myasthenic symptoms. We therefore conclude that it is possible to use botulinum toxin in the presence of defective neuromuscular transmission .

KEY WORDS: dystonia, myasthenia gravis, botulinum toxin.

Tratamento de distonia cervical com toxina botulínica em uma paciente com miastenia gravis

RESUMO - Relatamos o caso de uma mulher de 49 anos com rara combinação de miastenia gravis e distonia cervical tratada com toxina botulínica tipo A, apresentando boa resposta e nenhuma evidência de piora do quadro miastênico. A partir dessas observações concluimos que é possível o uso de toxina botulínica na presença de doença da transmissão neuromuscular.

PALAVRAS-CHAVES: distonia, miastenia gravis, toxina botulínica

Since its introduction into clinical use in early 1980's, botulinum toxin A (BTX) has been demonstrated to provide an effective and safe therapeutical alternative for focal and segmental dystonia and other disorders manifested by inappropriate contractions of voluntary muscles[1-3].BTX injections have advantages over systemic pharmacologic agents, which have limited effectiveness, and surgical procedures that provide some degree of success but have had unacceptable rates of reoccurrence. Graded degrees of muscle weakness can be achieved by changing the BTX dose injected. BTX is extremely potent and even small amounts injected subcutaneously or intramuscularly may induce substancial local effects with minimal side effects[2]. Besides, local adverse effects of BTX are transient and systemic spread of the toxin is minimal.

There are some controversies regarding BTX injections in patients with pre-existing disorders affecting neuromuscular junction function, as myasthenia gravis (MG)[3].

The purpose of this report is to present the case of a woman who had the rare association of MG and cervical dystonia (CD) and was treated with BTX.

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CASE REPORT:

A 49-year-old woman developed generalized weakness at age 37 and had the diagnosis of MG confirmed by electromyography (with positive tensilon test) and acethylcoline receptor antibody testing (serum titer: 56.9 molar) The patient underwent a short therapeutic trial with neostigmine without obvious benefit and was subsequently submitted to a thymectomy with good results . After the surgical procedure her myasthenic symptoms were controlled with neostigmine 180 mg a day. A mild residual muscle weakness upon physical exertion remained.

Five years ago she developed cervical and right shoulder pain followed by intermittent involuntary movements consisting of head turning to the right and a dystonic cervical tremor. Along the following years her pain and involuntary movements became more severe and, in addition to torticollis, she developed retrocollis and right laterocollis. Her personal history failed to disclose head trauma or use of neuroleptics in the past. Physical examination and laboratory tests were unremarkable. The neurological examination disclosed a complex cervical dystonia with torticollis and laterocollis to the right in addition to retrocollis; left sternocleidomastoid muscle was hypertrophied. The dystonic symptoms scored 4 points (severe, incapacitating spasm or movement) in Baylor scale[4]. There were no other neurological findings.

She was placed on 12 mg a day of biperiden with no clinical improvement. She was then admitted to the hospital and 80 units (U) of BTX (Botox-Allergan) were injected ,with electromyographic assistance, into the left sternocleidomastoid, 50 U into the right splenius capitis and 70 U into right trapezius.

RESULTS

The injections produced moderate improvement of the dystonic movements but a marked relief of the pain. Immediate undesired effects such as local pain or hematoma were not observed. Subacute complications like dysphagia, neck or generalized weakness were not reported either and she was discharged 2 weeks after her hospital admission. One month after this first session of BTX injections she scored 3 points (moderate spasm or movement with moderate functional impairment) in the Baylor scale. A second session of injections were performed two months later. One hundred units were injected into right splenius capitis, 50 U into right trapezius and 20 U left trapezius. Sternocleidomastoid muscle was not injected Four weeks after the second session the dystonic movements reduced in nearly 80% and the patient scored 2 points (moderate spasm or movement but without functional impairment) in Baylor scale . Again, no acute or subacute undesirable effects were recorded and the maximum benefit obtained from this second session lasted three months. Six months later, she was submitted to a third session of BTX and received 70 U in left sternocleidomastoid, 80 in right splenius capitis and 50 U in right trapezius. After this session, the patient scored one point (mild, barely noticiable spasm or movement) in Baylor's scale and had no side effects. The clinical improvement wore off in approximately six months when she was given a further BTX 140 U in the same muscles injected on third session. The response to this last session was again successful and no evidence of deterioration of her myasthenia gravis symptoms were observed. Five months after this fourth BTX treatment the effect remains unchanged.

DISCUSSION

More than 1100 patients with MG have been seen between 1951 and 1999 at University of São Paulo General Hospital. Only one patient presented CD.

BTX blocks the release of acetylcholine from the motor nerve terminals producing muscle paralysis[2]. For this reason, caution is needed when employing BTX in patients with MG, Eaton-Lambert syndrome and motor neuron disease. This is even more relevant when large doses are required as in the treatment of CD[1]. Indeed, a remote effect of the BTX has been electromyographically shown on muscle fibers distant from the injection site. This is manifested as increased jitter on single-fiber electromyography[5].

Emmerson[6] described a 51 year-old woman who developped MG at 16 years old, who went into spontaneous clinical remission after developing CD. She was treated with BTX injections. The

therapeutic response was satisfactory but, she had dysphagia on second and third treatment session and required a temporary nasogastric feeding.

In the case reported herein the patient did not present any local complications such as dysphagia or neck muscle weakness. Furthermore, no systemic side effects were observed and the myastenic symptoms remained under control with the same doses of neostigmine. It should be noted that our patient required lower doses of BTX than usually needed to treat CD and the duration of the last two sessions of injections was more prolonged than commonly observed in dystonic patients.

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