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Botulinum Toxin Type A Therapy During Pregnancy

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Abstract: Injection with botulinum toxin type A (Botox) is a safe and efficacious treatment for idiopathic cervical dystonia. We present the first case report of clinical Botox treatment during pregnancy. This patient underwent four apparently uncomplicated full-term pregnancies while receiving regular Botox treatments. © 2004 Movement Disorder Society

Key words: idiopathic cervical dystonia; spasmodic torcollis, botulinum toxin type A; pregnancy; BOTOX

Botox therapy is an FDA-approved treatment for cervical dystonia that has repeatedly been proven to be safe and effective.[1–4] Botox therapy is not currently indicated for use in pregnant women (Category C) and children under 12 years of age.[4] Although there have been no formal studies of Botox administration in pregnant women, a 1997 study reported sending questionnaires to 900 US physicians who inject Botox.[5] Among the 396 responses, there were 17 incidental injections of 1.25 to 300 U of Botox in pregnant patients. None of the newborns had abnormal deliveries, was floppy, or had any postnatal problems.

Case Report

A 26-year-old woman diagnosed with severe, idiopathic cervical dystonia was referred to the movement disorders clinic at the Vanderbilt University Medical Center. She was treated with trihexyphenidyl (15 mg/day) with minimal improvement. At presentation, she had severe laterocollis to the point that her ear frequently touched her shoulder. The laterocollis was accompanied by tilt of her entire torso such that much of her chest was horizontal when she walked. Botox injections to her neck improved not only the range of motion of her neck, but also her posture. With her initial dystonia, she had severe dysphasia and pain, both of which improved with Botox treatment. During this visit the patient's splenius, scalene and sternocleidomastoid muscles were injected with a total of 300 U Botox, which was tolerated well. She was again injected with 300 U at 3 and 6 months after the initial treatment.

It was later discovered that the patient had become pregnant with her first child slightly before her last treatment. After discussing the risks and benefits of oral medications and Botox with the patient, her obstetrician, and neonatal neurologist, it was recommended that she continue Botox and discontinue trihexyphenidyl. This decision was based on the superior efficacy of Botox compared with trihexyphenidyl, the need to limit her medications, and her inability to function without treatment. The patient was informed that Botox is a Category C medication and that risk to the fetus could not be ruled out. She was warned of potential short-term and long-term risks to the fetus before consenting to be treated with Botox during her pregnancy.[6]

The indications for injections were the same before all subsequent injections during her pregnancy. At the time of each injection, she was complaining of pain that would require either repeated injections of botulinum toxin or the addition of oral medications. Throughout her pregnancy, Botox provided significant improvement that waned at approximately 3 to 4 months after each injection.

Botox treatment was resumed 15 weeks into the pregnancy with the injection of 200 U. The patient returned 6 weeks later complaining of pain and discomfort. Her treatment with another 100 U was again tolerated well, and it was noted that the pregnancy was "going well." It is important to note that this "booster injection" was carried out before the understanding that injections at intervals less than 3 months may increase the risk of antibody formation to botulinum toxin. There was no indication the patient developed antibodies to botulinum toxin during her course of treatment. She was injected with another 300 U 3 months later, at 32 weeks of the pregnancy. By the time she arrived for her next appointment, the patient had delivered a healthy child. She did not nurse the child and low-dose baclofen (30 mg/day) was added as an adjunct to Botox.

The patient became pregnant with her second child 2.5 years later and baclofen was discontinued. After reiterating the potential risks of Botox during pregnancy, the patient decided to proceed with the treatment. She was injected with 300 U twice during the pregnancy, and the treatment was effective. She

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Received 24 September 2003; Accepted 2 April 2004
Published online 11 June 2004 in Wiley InterScience in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/mds.20205

TABLE 1. *Total units Botox injected during each pregnancy*

Pregnancy	Pre-conception*	Trimester			Total
		First	Second	Third	
First	300	300	300	300	1200
Second	300	300	0	300	900
Third	300	0	300	0	600
Fourth	300	0	300	300	900

*Pre-conception refers to the 3-month period preceding the conception of the child.

again delivered a healthy child without any complications and continued thereafter with a regular treatment regimen of Botox injections.

Two years later, the patient became pregnant with her third child. Adjunctive baclofen was again discontinued and she was maintained on Botox monotherapy throughout her pregnancy. She was again injected with 300 U on two separate occasions during the pregnancy and responded well with no side effects. She had another uncomplicated delivery of a healthy child and continued with her regular treatment plan. After this delivery, the patient declined resuming oral medications.

The patient became pregnant with her fourth child 2 years later. She was injected with 300 U of Botox on two separate occasions and responded well to the treatment with no side effects. She proceeded to have her fourth uncomplicated pregnancy during treatment with Botox and delivered a healthy child.

Discussion

Although much literature has been devoted to the safety and efficacy of Botox, there have been no published case reports about its use in pregnant patients. Convulsions in a neonate exposed to intrauterine baclofen have been reported after birth.[7] Botox has the advantage of acting locally, as opposed to the more systemic effects of oral medications.

This case report illustrates a patient who experienced four apparently uncomplicated full-term pregnancies while receiving regular Botox treatments for cervical dystonia (Table 1). APGAR scores are not available for any of this patient's children. They were delivered in a rural hospital and none of the children had a longer than expected hospitalization, as reported by the mother. None of the children was breast-fed. Although the children were not examined directly, there was no indication of any cognitive or motor developmental delay in any of the children during the follow-up period. This was approximately 5 years for the oldest child.

Initiation of Botox treatment in a pregnant patient should always include consultation with physicians familiar with treating dystonia, the patient, and the patient's obstetrician. Although no adverse effects were noted in this case, more investigation is needed to determine the safety and efficacy of Botox injections during pregnancy.

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