Ergotamine as a Possible Cause of Möbius Sequence: Additional Clinical Observation

ABSTRACT

A case of Möbius sequence after exposure to ergotamine during early development is reported. Vascular disruption is one of the theories explaining the pathogenesis of Möbius sequence. Ergotamine can cause vasospasm and a prolonged and marked increase in uterine tone. This is the second report suggesting a relation between maternal ingestion of ergotamine in early pregnancy and subsequent Möbius sequence in a child. 

Möbius sequence is characterized by congenital facial diplegia and external ophthalmoplegia, with variable involvement of other cranial muscles and musculoskeletal and cardiovascular systems. It is usually the result of hypoplasia or aplasia of the respective brainstem nuclei. A transient ischemic insult to the embryo during the sixth gestational week is one of the mechanisms that might explain Möbius sequence. That insult can result in focal calcium deposits, revealed on brainstem computed tomographic scan as small increased tissue densities.

Graf and Shepard reported a patient with Möbius sequence born to a mother who inadvertently received three doses of 2 mg ergotamine on the estimated 30th day of her pregnancy. They proposed that both vasoconstriction and uterine contractions brought on by ergotamine during the sixth week of pregnancy caused the birth defect. We report a second case of Möbius sequence after intrauterine exposure to ergotamine.

Case Report

During the first 8 weeks of pregnancy, the mother was taking ergotamine (2 mg suppositories) on a regular basis. She interrupted treatment when pregnancy was confirmed by echography at 8 weeks. Until then, there had been no uterine cramps or vaginal bleeding. The baby was born at 39 1/2 weeks after an uneventful pregnancy, except for polyhydramnios at the time of delivery. He presented with axial hypotonia associated with facial diplegia (small mouth and absent mimes), bilateral abducens nerve paralysis, pes equinovarus, and coarctatio aortae. Surface electromyography of the orbicularis oculi, orbicularis oris, and frontalis muscles was consistent with bilateral seventh nerve palsy. Sensory and motor conduction studies were normal in the extremities. Brainstem evoked response audiometry was within normal limits. Radiologic studies of the brain stem failed to show calcifications.

Discussion

This is the second report of Möbius sequence that is probably the result of the effects of ergotamine taken during the first 8 weeks of pregnancy. The vascular bed of the brain stem is especially vulnerable at that time. Moreover, cranial nerve VI and VII nuclei are located in a flexed (and thus more vulnerable during uterine contraction) area of the brain stem. Ergotamine toxicity is known to cause vasospasm and increased uterine tone, and reports of adverse outcomes following the use of the drug during pregnancy are consistent with vascular injury. Because of its uterotonic effects and because its use is associated with increased perinatal mortality and developmental abnormalities, including cleft palate and limb defects, ergotamine is classically contraindicated during pregnancy. The recurrence of the same phenomenon—a child with Möbius sequence after maternal intake of ergotamine—underscores the importance of avoiding ergotamine during pregnancy. When prescribing ergotamine compounds to any female patient of childbearing age, physicians should warn about the contraindications of ergotamine, including during the first weeks of a yet unsuspected pregnancy.

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References
