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Clinical Reports

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An Unusual Sensitivity to d-Tubocurarine

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The following case report describes a patient who manifested an unexpected sensitivity to d-tubocurarine. The patient was given curare 3 mg. Shortly thereafter, she became apneic and required ventilatory resuscitation.

REPORT OF A CASE

A 22-year-old Caucasian woman, gravida II, para 1, was admitted to the labor ward in active lahor. Past history was remarkable in that she had had idiopathic thrombocytopenic purpura which necessitated splenectomy a year perior to admission. She had not received steroids since the operation, and there was no evidence of residual disease. Twenty-one months prior to admission, she had had a cesarean section because of cephalopelvic disproportion. She denied cardiorespiratory problems, allergies or other illnesses. She denied adverse reactions to previous anesthetics. She weighed 75 kg. Blood pressure was 120/88 mm Hg, temperature 98 F, pulse 78/min, and respiratory rate 18-22/min. The heart and lungs were normal.

The patient was scheduled for elective cesarean section and prepared for general anesthesia. Immediately prior to the induction of anesthesia, dtubocurarine, 3 mg, was given intravenously to prevent succinylcholine-induced fasciculations. One minute after the administration of d-tubocurarine, before any other medication had been given, the patient manifested unusual behavior. She began moving her arms and legs in an uncoordinated fashion, an apparent panic reaction. She was still fully conscious but soon lost the ability to communicate. Paralysis and apnea ensued. We were

vocal cords were noted to be abducted, and the patient did not react to the endotracheal tube Anesthesia was maintained with nitrous oxide−oxv® gen 4:2 l/min: no supplemental anesthetic agent was needed. Within 10 minutes, a male infant was de livered. Apgar scores were 7 and 10 at 1 and § minutes, respectively. Thirty-five minutes later d-tubocurarine, 1.5 mg, was injected to facilitat€ closure of the abdomen. A stimulator was there attached to the wrist over the ulnar nerve. Fifty five minutes after the beginning of the operation, the block was antagonized. Neostigmine, I mg. iv, pro≤ duced a gradual increase in twitch tension; an addica tional I mg resulted in a stronger twitch, sustained tetanus, and absence of posttetanic facilitation. The patient was carefully observed in the recovery roor and showed no signs of muscular weakness.

able to ventilate the lungs without difficulty via $\frac{\vec{\omega}}{\vec{k}}$

face mask. Thiopental sodium, 200 mg, was given?

and the trachea was intubated without need of addig

tional relaxant drugs. During laryngoscopy, the

Four days after the cesarean section the patient was seen in consultation with the neurology serv ice. At this time, she denied all evidence of neuro muscular disease, weakness, or easy fatigability. She related a several-year history of occasional episodes of diplopia, usually occurring after long drives or after prolonged periods of reading. Examination by the neurologist was entirely within normal limits She was able to do repetitive exercises with no decrease in strength. A challenge with d-tubocura rine, 0.5 mg, iv, produced diplopia with paralysis o upper outer gaze, d-Tubocurarine, 1.5 mg, produced marked weakness of grip strength and loss of ability to raise the head from the horizontal position. The patient had no respiratory distress or hypotension

The challenge was terminated with neostigmine.

The patient was discharged with an appointment in the Neurology Clinic, but she failed to return and was lost to follow up.

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Discussion d-tubocurarine prior to succinylcholine is a fairly common practice among anesthesiolo

gists. The purpose of this treatment in this patient was to reduce the likelihood of postsuccinylcholine muscle pain. Other suggested reasons for giving d-tubocurarine prior to succinylcholine include prevention of increases in intraocular pressure³ or intragastric pressure^{4,5} and prevention of a hyperkalemic response.⁶ The effectiveness of the latter has been challenged.⁷

The use of d-tubocurarine prior to succinylcholine is not without problems. Several investigators have shown that succinylcholine is less effective in producing relaxation when given after d-tubocurarine. *5 In order to get the same intensity of paralysis, a 50 per cent increase in succinvlcholine dose must be given. A question concerning an alteration in the nature of the neuromuscular block when succinylcholine is given after d-tubocurarine has also been raised. While we know of no published report of prolonged paralysis from succinylcholine as a result of its being given after 3 mg d-tubocurarine, Walts et al.9 have described a case in which there was a markedly delayed recovery from succinylcholine when it was given late in an operation in which d-tubocurarine had been used as the primary relaxant.

The problem presented in this case illustrates another potential hazard—unexpected paralysis from a small dose of d-tubocurarine. In their early human studies with d-tubocurarine, Pelikan et al. 10 found that the response to any dose was unpredictable. They reported that 3 to 4 per cent of normal patients have a threshold to d-tubocurarine similar to that of patients with myasthenia gravis. Katzl 11 recorded twitch responses in 100 patients given d-tubocurarine, 0.1 mg/kg. He found that while the usual response to this dose was 40 to 70 per cent paralysis of twitch tension, 7 per cent had complete paralysis.

Sanger and Kinyon reported an episode of sensitivity to d-tubocurarine in a patient with unrecognized myasthenia gravis. If It might be argued that our patient does, indeed, have myasthenia gravis. However, we believe there is no basis for making this diagnosis at this time because the patient essentially has no clinical symptom and requires no therapy.

Judging from the failure to find other reports such as ours, we must conclude that the extent of sensitivity manifested by this patient that the extent of sensitivity manifested by this patient that the sense of the sologists of the sologists that, although rare, such reaction is not unknown. Even small doses of d-tubocurarine should not be administered in the absence of equipment for resuscitations. Patients given d-tubocurarine, regardless of the dose, should never be left unobserved.

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