URTICARIA DUE TO ATROPINE
A Case Report

BY
H. G. SCHROEDER
Department of Anaesthetics, The Royal Infirmary, Sheffield, England

SUMMARY
A case is described of a patient who developed generalized urticaria and ocular oedema following an intramuscular injection of atropine sulphate. This responded rapidly to intravenous administration of promethazine hydrochloride. The patient, who had a strong personal history of allergy, had received atropine sulphate intramuscularly three months previously without ill effect.

True allergy to atropine is very rare. A case is described of a young woman who became sensitized to atropine and on being given a second injection of atropine three months later showed a marked allergic response.

CASE
A young woman, aged 19, attended the hospital as a day case in February in order to have a Jones operation performed on her right great toe.

Pre-operative examination revealed a healthy woman of average height and weight, with a resting pulse of 82 b.p.m., and a normal blood pressure.

Premedication of atropine sulphate, 0.65 mg was ordered to be given 30 minutes before the time of the operation.

On arrival in the anaesthetic room, the patient was found to be extremely agitated, yet drowsy, and was complaining of photophobia and blurring of vision. There was a coarse tremor of her lower jaw, which she said she could not control. Her mouth was extremely dry and she could not swallow. There was an urticarial rash present on her face, neck, shoulders, arms and chest, which she said was associated with pruritis. Her eyes were watering and there was minimal conjunctival injection. The pulse rate was 120 b.p.m. and the blood pressure was normal. There was no bronchospasm present.

Anaesthesia was induced with a sleep dose of sodium thiopentone and maintained with nitrous oxide, oxygen and halothane.

It was soon apparent after a few minutes of anaesthesia that the allergic response was progressing. Bilateral ocular oedema appeared and the urticaria increased. There was intense conjunctival injection. It was decided to administer 25 mg of promethazine hydrochloride intravenously to counteract the response. During the next 10 minutes the urticarial rash and the ocular oedema were seen to recede, and by the end of the operation they had almost entirely disappeared. In view of this occurrence the patient was detained in hospital overnight.

As atropine allergy is so uncommon and as there was reasonable doubt as to the cause of the allergic response, it was decided to perform an atropine sensitivity test on the following day. The patient was given atropine sulphate 0.065 mg subcutaneously. Twenty-five minutes later the patient developed urticaria, ocular oedema and jaw tremor, which seemed to progress in severity. Once again the symptoms were controlled with an intravenous injection of promethazine hydrochloride. Thus there was no longer any doubt that this was a case of allergy to atropine.

Three days later an intradermal test showed a marked triple response to atropine but a negative response to hyoscine hydrobromide and to normal saline.

This patient has a strong family history of allergy; both parents and her only brother have past histories of allergy. She herself has only suffered from rashes "due to something she ate" during her childhood.

This patient had an injection of atropine sulphate 0.65 mg, three months earlier as pre-operative medication. On this occasion she showed no abnormal response to the drug. As far as she can tell she had never previously been given an injection of atropine.

COMMENT
This is a case in which the patient was given atropine sulphate in November 1962, and when this injection was repeated three months later, an acute allergic response was precipitated. Allergy to atropine, resulting in generalized urticaria and ocular oedema is fortunately rare, but also highly important, as the progressive response could lead to laryngeal oedema and death unless treated. In this patient the symptoms were rapidly controlled by an intravenous injection of promethazine hydrochloride.

A case of urticaria caused by atropine which progressed to a fatal outcome has been described by Matanić (1956).

In cases of atropine overdosage, rashes about the head and neck can occur, but these are usually scarlatiniform rashes. This type of rash is not uncommon in children who have received atropine
URTICARIA DUE TO ATROPINE

as premedication. However, urticaria due to atropine is rare.

Restlessness, garrulity and uncontrollable tremor of muscles are signs of overdosage usually, and are due to the central stimulant effect of atropine. The occurrence of restlessness, agitation and uncontrollable tremor of the jaw in this patient was probably due to a hypersensitive reaction to an otherwise normal dose of atropine.

Hypersensitivity to atropine, in the form of local contact dermatitis and conjunctivitis, as the result of local instillation in the eye, is seen occasionally in ophthalmological practice. The symptoms are photophobia, itching, erythema and oedema, and according to Fralick and Kiess (1949) these symptoms can be controlled by local and systemic antihistamine therapy. It is interesting, however, that these patients do not respond to systemic atropine with an acute allergic response.

The occurrence of restlessness, agitation and uncontrollable tremor of the jaw in this patient was probably due to a hypersensitive reaction to an otherwise normal dose of atropine.

The fact that an intradermal test to hyoscine should be negative in this patient is unusual, as patients who are hypersensitive to one alkaloid of belladonna are usually also hypersensitive to the other closely associated alkaloids. Atropine and hyoscine are both alkaloids of belladonna differing only in that atropine is tropine tropate, whereas hyoscine is scopine tropate. Tropine and scopine differ only by an oxygen bridge.

It is of interest that the writer has been unable to find in the literature any report of a patient showing an urticarial response after administration of atropine or hyoscine by the oral route in the management of Parkinsonism or peptic ulceration.

The strong bilateral antecedent family history of allergy in this patient is to be stressed, as the incidence of allergy is higher in these cases.

The possibility of an unexpected allergic response should always be considered when administering any drug to patients with a personal or family history of allergy. If an allergic response does occur it should be rapidly controlled by the administration of a suitable antihistamine.

The importance of informing patients when a drug allergy is diagnosed and of warning them to volunteer this information whenever they have future cause to consult a doctor, cannot be overemphasized. Precautions should also be taken to ensure that the drug allergy is stated plainly and clearly on the patient's case notes.

REFERENCES

URTICAIRE PROVOQUÉE PAR L'ATROPINE

SOMMAIRE
Description du cas d'un patient chez lequel survint une urticaire généralisée et un édème palpebral après injection i.m. de sulfate d'atropine. L'administration i.v. de chlorhydrate de prométhazin fit disparaître ces manifestations rapidement. L'anamnèse du patient fit ressortir une tendance allergique marquée. Il avait cependant reçu trois mois plus tôt une injection i.m. de sulfate d'atropine sans réaction d'aucune sorte.

DURCH ATROPIN VERURSACHTE URTICARIA

ZUSAMMENFASSUNG
Berichtet wird über das Auftreten einer generalisierten Urticaria und eines Lidödems bei einem Patienten, dem Atropinsulfat i.m. appliziert worden war. Die Urticaria sprach auf i.v.-Gaben von Promethazinhydrochlorid schnell an. Der Patient, dessen Anamnese deutliche allergische Züge aufwies, hatte vor 3 Monaten Atropinsulfat i.m. erhalten, damals ohne jede Reaktion.