

Serum-Type Allergic Reactions to Local Anesthetic Injections—Report of Two Cases

N. M. Ross, D.D.S.*

*Associate Professor, Dep't. of Pharmacology, Baltimore College of Dental Surgery, University of Maryland.

In the course of clinical investigations of local anesthetic solutions for use in dentistry, the author has observed and has had brought to his attention two unusual allergic reactions to mepivacaine HCl (Carbocaine). A review of the literature discloses no indication of such reactions having been previously reported.

Mepivacaine is commercially available as a 2% solution with Neo-Cobefrin 1:20,000 as a vasoconstrictor and as a 3% solution without added vasoconstrictor. Both of these solutions have been clinically tested in Europe¹ as well as in this country.^{2,3,6,7} In the course of this investigation, toxicity was found to be relatively low and allergic responses were rare.^{3,4,6,7} In further clinical investigations,^{5,8} these authors encountered no serious reactions, and we now believe that these reactions, though unusual, might occur following any local anesthetic injection and might be unrecognized by the busy practitioner.

In the first case, the patient was female, age 30, in good health but of highly nervous temperament. The injection was an infiltration of 1.8 ml. of mepivacaine 2% with Neosynephrine 1:5,000 (a solution then under investigation) over an upper central incisor. Anesthesia was satisfactory and the cavity preparation was uneventful. Six hours following the injection,

the patient's physician called that the patient was apparently undergoing a violent serum-type allergic reaction. Symptoms consisted of severe headache, nausea and vomiting, fever, joint pains and general malaise. The patient was treated with analgesics and the symptoms subsided over a 12-hour period.

Two weeks later, not having recognized the offending agent, an injection of 1.8 ml. of the same solution again was infiltrated over an upper lateral incisor. Two hours later the patient reported the onset of the same symptoms, but with greater severity. She was treated this time with an i.v. antihistamine and a corticosteroid as well as with analgesics, and the symptoms subsided within two hours. Future injections of preparations including Xylocaine local anesthetic and Ravocaine — Procaine, did not produce repetition of the symptoms.

The second patient was a male, age 41, in good health and of stable temperament. This patient happened to be a clinical investigator for an ethical drug company, and was able to report his symptoms accurately. Within 10 minutes following a mandibular injection of 1.8 ml. of mepivacaine 2% with Neo-Cobefrin 1:20,000, the patient reported to his dentist that he felt he was undergoing a histamine-like reaction. Symptoms consisted of swelling at injection site (distinct from anesthesia) malaise, nausea, headache and joint pains. Shortly thereafter, fever developed. The patient medicated himself heavily with antipyretic anal-

gesics and tranquilizers. Within three hours, the joint pain, fever and nausea subsided. By eight hours, the headache, malaise and local swelling were essentially gone. The patient has not since submitted to a reinjection.

Discussion:

In the course of routine injection of local anesthetic solutions in healthy patients, it is possible to encounter allergic reactions which are fully as serious as toxic reactions. Although there has been much written about the more common simple dermal allergic responses and the more serious and possibly fatal anaphylactoid reactions, little has been reported regarding the serum-type allergic response to local anesthetics. This paper presents two such cases to exemplify this type of response. Although incidence of this type of reaction is relatively rare, it is a frightening, uncomfortable experience for the patient, and could be upsetting to the practitioner who fails to recognize the symptoms of this variation in the allergic phenomenon.

Treatment should consist of the administration of corticosteroids, parenterally or orally, for the more severe reactions. Where the reactions are less severe and are therefore expected to be of short duration, the antihistaminic drugs may be prescribed, parenterally or orally. The analgesic drugs may be used for symptomatic relief of pain.

Summary:

Two cases describing the symptoms of serum-type allergic reactions to mepivacaine HCl are presented. Since this type reaction might follow an injection of any local anesthetic solution, it is useful for practitioners to be familiar with this symptom complex and its treatment.

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