ANAPHYLACTIC REACTION TO INTRAVENOUS ADMINISTRATION OF PROCAINE

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During the past three years the use of procaine intravenously has become more and more popular. Tovell, Graubard, Martin and others have written and spoken extensively on the subject. The following case is reported because it records both an uncommon use of this drug and an uncommon reaction to it.

A white woman, aged 74, had had hypertensive arteriosclerotic cardiovascular disease for at least four years. Since 1945 she had had an auricular fibrillation which was kept under control with digitalis. In October 1946 she was hospitalized because of transient attacks of minor motor aphasia. The discharge diagnosis was: (1) hypertensive cardiovascular disease, arteriosclerosis and (2) cerebral arteriosclerosis. She was given digitalis, aminophylline and nicotinic acid and had been taking these medications almost continuously ever since.

On June 25, 1948, she began to complain of painful, cold legs of about one week's duration. Marked arteriosclerosis with a weak dorsalis pedis pulse was found bilaterally. She was treated symptomatically for a while but grew worse. Next she was given intramuscular injections of etamon chloride. This did not relieve her pain and the side effects were quite unpleasant. The legs remained cold and in August an ulcer began to form on the left shin. At this time she was receiving 2 cc. of depropanex daily. There was still no relief and the ulcer continued to grow.

On October 6, 1948, she was given her first intravenous injection of procaine, 0.5 Gm. in 500 cc. of normal saline solution. All subsequent doses were 1.0 Gm. in 500 cc. The response was prompt and gratifying. There was almost immediate relief of the pain and in a few days definite circulatory improvement was visible. Subsequent injections were given on October 8, 10, 12, 14, 16, 19, 21, 24, 27 and 31 and on November 3. At no time was there any suggestion of a toxic reaction. The ulcer had begun to heal and the treatments had come to be accepted by the patient as a normal routine. All injections took from one to one and one-half hours.

On November 7, about two hours after her regular treatment, she had a mild chill and a slight attack of dyspnea. This was so slight that
the attending physician was not notified until the next day. It was thought that this reaction might be due to some pyrogen in the syringe used to transfer the procaine from the ampule to the infusion bottle.

On November 10 the patient was again given her regular injection. Two hours after the completion of the treatment she awoke from sleep and complained of shortness of breath. Severe dyspnea, wheezing and vasomotor collapse developed rapidly. Upon arrival of a physician it was evident that she was having a severe anaphylactic reaction. Epinephrine and benadryl were administered hypodermically. Recovery took place in about one half hour but some dyspnea remained for about six hours.

The injections were stopped. On November 15 an intradermal test, using 0.05 cc. of 1 per cent procaine was done. No reaction was obtained.

The ulcer, meanwhile, continued to heal. She had very little pain in the leg until December 10. By December 17 the pain was so severe that it was decided to try another injection. The same dose of procaine was used but it was administered very slowly—500 cc. in two hours.

Two hours later the patient became quite confused mentally and dyspneic. Epinephrine was administered at once with good results except that the patient was markedly stimulated and required morphine for sedation. She remained somewhat confused for the next twenty-four hours.

Needless to say she has had no more procaine. She is now receiving priscol, 25 mg. four times a day. The ulcer has completely healed and she has very little pain.

**Summary**

A case is presented in which procaine administered intravenously was successfully used for the treatment of arteriosclerotic peripheral vascular disease. A major complication in the form of induced sensitivity and subsequent anaphylactic shock was encountered. We have since learned that acquired sensitivity to procaine is not rare and is fairly common as a cutaneous sensitivity in dentists who handle this drug frequently.

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**CONNECTICUT STATE SOCIETY OF ANESTHESIOLOGISTS**

A meeting will be held on December 14, 1949 at 8:00 P.M.

at the

Charlotte Hungerford Hospital, Torrington, Connecticut,

where the following program will be presented:

1. "Signs and Symptoms of Stages of Pentothal Anesthesia," by Benjamin Eisten, Professor of Anesthesiology, Tufts College Medical School, Boston, Mass.

2. Anesthesia Study Commission Case Report.