be more reduced than diparcol (50 mg. with 150–200 mg.) to avoid serious respiratory depression. The patient is now rather somnolent and the jaw well relaxed, but he can still be aroused. Curare is added (intocostrin® 9 mg. or flaxedil® 60 mg. with 25 to 50 mg. of pentothal®) for intubation under direct vision.

(c) Maintenance: N_2O plus O_2 at the ratio of 1:2 with pentothal or cyclopropane and curare added as needed. The cooling agent is ice, and in some cases hexa- or pentamethonium was also used, but Huguenard questions their usefulness in this technique except where severe bleeding might otherwise ensue. The temperature is kept around 32–34 C. The temperature measured by rectal thermocouple, has to be as carefully observed and recorded as pulse and blood pressure—in fact, the usual signs and symptoms of hypoxia are absent due to the autonomous block, while the temperature curve shows such hypoxia early. Prothrombin time falls sometimes to 35 per cent of normal during general refrigeration. The eosinophile count, too, drops, but much less than during "classical" anesthesia.

Huguenard feels that this technique needs further investigation and study and that it is not yet ready for general use.

Unfortunately, none of the papers give credit to the pioneer work of Faye and F. M. Allen about the effects of cold in its local application in refrigeration anesthesia as well as in general cooling.

E. G. B.

BEINHAUER, L. G.; THOMAS, G. J., AND PERRIN, S. R.: *Intravenous Use of Procaine Hydrochloride in Control of Pruritus.* A. M. A. Arch. Dermat. & Syph. **65**: 39–44 (Jan.) 1952.

"The purpose of this paper is to report and evaluate our experience with the intravenous use of procaine hydrochloride . . . as a therapeutic measure to combat pruritus and facilitate healing in a group of common pruritic dermatoses. . . . Our clinical experiences indicated that a dosage of 0.1 to 0.2% of procaine hydrochloride in 500 cc. isotonic saline solution was best tolerated by our patients when given over a period of 60 to 90 minutes. All patients were routinely given barbiturate medication one hour before injection. Ascorbic acid in the amount of 200 mg. was added to each infusion, as we felt it increased the resistance against toxic side effects and benefited patients with poor nutrition. When edema was present, 5% dextrose was added and removed when the edema subsided. In patients with heavy nervous irritability and fear of the infusion, thiopental (pentothal) sodium U.S.P., in dosage of 200 to 300 mg., was added to the first two or three injections. This afforded a very satisfactory approach to overcome these symptoms and allowed further treatment to be continued without incident. It produced dramatic relief of pruritus and allowed the patient to obtain the much-desired sleep. The most favorable and dramatic responses we obtained with this modified therapy were in the group of generalized neurodermatitis. Each patient in our series received one daily injection. On three occasions, two daily injections were given for three successive days. . . .

"The minimum number of injections given was 2, and the maximum was 30. We soon learned that if relief was not forthcoming within six days, further therapy would be of questionable value. Most patients who reacted favorably to this therapy manifested relief from pruritus after the fourth daily intravenous injection. We did not encounter any evidence of addiction to the drug, and no acquired sensitivity was observed. . . . In our

series, totaling 183 patients, a preliminary skin test, as suggested by McLachlin, was performed on each patient. One hundred and fifty-one patients had previously received local procaine injections for medical or dental reasons. Twelve patients gave additional history of frequent contact exposures to procaine. Patch tests with 1% procaine solution were done on these patients, as well as intradermal testing, and reactions to patch tests were negative. Only three patients in our series manifested reactions in intradermal testing. . . . Two patients gave a marked local reaction within a period of 20 minutes and manifested symptoms of dizziness, light-headedness, tremor and tightness in the chest. These reactions we felt, eliminated them from treatment. The third patient reacted positively to the intradermal injection and manifested no systemic symptoms. Intravenous procaine therapy was given to this patient on two consecutive days. Within 20 minutes after each infusion, the patient complained of marked dizziness, apprehension, tightness in the chest, and momentary unconsciousness. The reactions were controlled with amobarbital (amytal) sodium N.F. intravenously, and the procaine therapy was discontinued. A total of 1780 injections were given. . . .

"Forty-five patients of the total group received subsequent intradermal skin tests with procaine at intervals of three months to one year. No evidence of acquired sensitivity was recorded in these patients. . . . From the data submitted we feel that intravenous use of procaine hydrochloride offers another approach to combat pruritus. When properly controlled, it is safe. We recommend it when other therapies fail." A. A.

KUTSCHER, A. H.: *The Analgesic Action of Subdamine. The Effect of Subdamine on Pain Threshold and in the Treatment of Idiopathic Glossodynia.* New York State J. Med. 52: 91–92 (Jan. 1) 1952.

"Nonas and McGavack, Weissberg and Nonas have reported that 1-diethyl-carbamyl-piperazine (Subdamine) acted as an analgesic and sedative during its adminstration to psychoneurotic patients with anxiety and tension symptoms frequently associated with the climacterium. This investigation reports upon the lack of effect of Subdamine upon the pain threshold of human skin. Its sedative properties, and the failure of this drug to alleviate idiopathic glossodynia permanently. Six subjects were thoroughly indoctrinated in the Hardy-Wolff-Goodell pain threshold technic. . . . The pain threshold of each subject was determined at half-hour intervals over a control period of five hours following the ingestion of a placebo capsule. On a subsequent day, under identical circumstances, the pain threshold-raising effect of + 0.5 Gm. Subdamine was tested on these subjects. . . . Subdamine (0.55 Gm. per capsule; one capsule four times a day) was administered for two weeks to 14 carefully selected patients (two males and 12 females, ages twenty-six to fifty-seven) who presented with prolonged suffering from idiopathic glossodynia. . . . The administration of 0.5 Gm. of Subdamine does not significantly alter the pain threshold in humans as determined by the Hardy-Wolff-Goodell technic. Subdamine, despite its desirable sedative properties, is not sufficiently effective in the treatment of idiopathic glossodynia."

A. A.