

Alcohol Block of the Mandibular Nerve

Report of a Complication*†

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THE use of alcohol for block of the peripheral nerves to obtain prolonged anesthesia is not without potentially serious complications. Also, the duration of anesthesia using this method is quite variable, reports ranging from three months to thirty years. This report deals with one of the infrequent but hazardous complications following this procedure.

CASE REPORT

A 42-year-old man received a knife injury to his left face in 1950. The knife entered the left maxillary sinus, causing denervation of several molar teeth and it damaged the left parotid duct. Following the injury the parotid duct was repaired and the molar teeth were extracted. He then gradually developed facial pain and recurrent swelling of the left side of his face. He was thought to have recurrent parotitis and was treated with antibiotics, heat and analgesics. He continued to have moderate to severe facial pain and in 1955 he underwent a left superficial parotidectomy which gave him symptomatic relief for approximately ten years. In 1966 he again developed left facial pain and the left parotid area was explored in search of a possible neuroma. None was found. His symptoms continued unabated and in 1969 he was given 4000 rads to the symptomatic area. This proved to be of no benefit. In 1970 a total parotidectomy was performed and it was complicated by a left total facial nerve palsy which lasted for approximately six months. His left facial pain continued to worsen and only mild relief was obtained with oral medication.

While in the Republic of South Viet Nam in January of 1972 it was decided to do an extraoral mandibular nerve block to relieve his symptoms. Following xylocaine nerve block using the zygomatic extraoral route, the patient received a good relief of his symptoms for three hours. Using the same technique the following day 1.5 cc. of 95% alcohol were injected followed by 2 cc. of air to clear the syringe before removal.

The patient noticed almost immediate onset of excruciating facial pain and his left anterior face became severely swollen. He required narcotics and other sedatives over the next few days until the pain and swelling gradually subsided. He developed necrosis of the skin of his left premaxillary area as well as the mucosa and bone of the left side of the hard palate. The necrosis did not cross the midline. An area of skin measuring 2 cm. x 2 cm. sloughed from his anterior face.

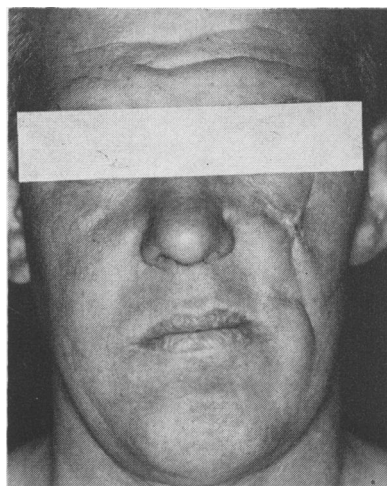


Fig. 1. Appearance of face after healing of ulcerated area.

He was transferred to the United States where devitalized teeth numbers 11, 12 and 13 were removed. Nasal examination was essentially normal and sinus x-rays revealed mild mucosal thickening. X-rays of the hard palate were of no real benefit in demarcating the area of extent of osteonecrosis. The remainder of the laboratory data were within normal limits. He was placed on antibiotics, analgesics and hydrogen peroxide mouthwash. Moist dressings were applied to the area of sloughed skin. With the above treatment the palatal sequestrum sloughed and the area of denuded skin

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healed uneventfully. There was no residual palatal defect. In spite of the above complications the patient did have good relief of his original facial pain. His only residual symptom were mild paresthesias of the mandibular nerve distribution. At the present time he is undergoing prosthodontic management for oral rehabilitation.

COMMENT

In 1906 the trigeminal nerve was first blocked for neuralgia by Levy and Boudouin. They reported results lasting twelve months or more. Alcohol causes sclerosis of the nerve tissue by its dehydrating action. Typical Wallerian degeneration occurs

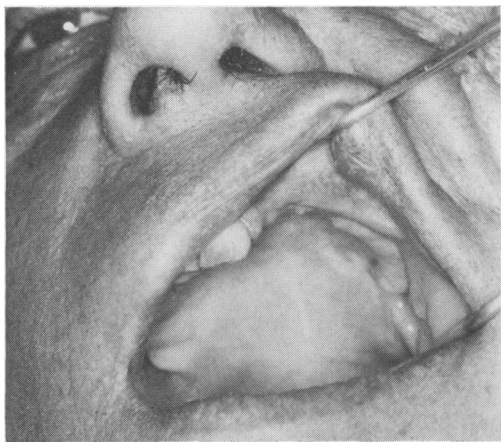


Fig. 2. Healed soft palate with no nasopalatine fistula formation.

following injection. The myelinated nerve regenerates but the time required depends upon the region of the body and other variables. The effect generally lasts between six and fifteen months. Experiments have shown that the closer to the Gasserian ganglion it is injected the more certain and longer lasting the block would be. Recently, it has been shown that blocks subsequent to the first are less

effective and the duration of action is shorter.

It is suggested that prior to the injection of alcohol a diagnostic block be performed with local anesthesia because the risks and complications are few. However, the duration of action is short. It must be remembered that along with the increased effect with alcohol goes increased risk of complications.

Because of the hazards of using this technique a number of reports in the past have dealt with methods of more exact infiltration to avoid palsies of other nearby nerves. Some have suggested that radiographic control be used when blocking the Gasserian ganglion. This is probably not necessary when blocking the peripheral nerves. Using local anesthetic solutions one may safely inject when atypical or at times no paresthesias are elicited. However, when alcohol is used one must always obtain paresthesias in the area of supply of the nerve to be blocked prior to infiltration. This will hopefully minimize the possibility of inadvertent injection of other nearby nerves as may have happened in our patient.

The patient should also be advised thoroughly regarding the technique as well as the possible complications resulting from the procedure. Other complications include toxic reactions, cheek hemorrhage, edema, and facial nerve palsy.

The cause of the gangrene and slough is difficult to determine. Sympathetic nerve involvement, reflex, vascular changes and faulty technique have been considered but none has been proven.

Our patient has a residual complaint of paresthesias of the mandibular nerve which is not uncommon in those with alcohol nerve blocks. His discomfort is of a mild nature and is not so nearly as uncomfortable as his original pain.

MSU CLINICAL SCIENCES CENTER

Assurance of the availability of \$4.9 million in federal funds to begin construction of a Clinical Sciences Center at Michigan State University has been received from the Department of Health, Education and Welfare. According to MSU President Clifton R. Wharton, Jr., the school will proceed with detailed plans for the new building as soon as \$1,000,000 in state funds is allocated by the Legislature's Joint Committee on Capital Outlay. The amount was appropriated earlier this year for initiation of the project.

When completed, the new center will provide a full range of family care and specialty outpatient services, allowing medical and other health profession students, as well as intern and residents, to gain clinical experience and training in health care. Cost of the building is an estimated \$14.9 million, with additional funding from various sources anticipated before its completion. While no inpatient facilities are included in the plans, a small hospital could be added at a later date.