

Heidenheim, in his article of 1904 (*Centralblatt für Chirurgie*, p. 249) also pointed out the efficiency of the addition of adrenalin to the cocaine solution. He used one-half of 1 per cent. cocaine, with one or two drops of adrenalin, which within half an hour produced anesthesia of the soft parts, which lasted several hours.

Neumann, in his article in the *Zeitschrift für Orhenheil Kunde*, 1906, 41, Band II., Heft, reported 20 radical mastoids under local anesthesia. He also mentioned having opened the frontal sinus and the antrum of Highmore without pain.

It was in two of the above cases that I assisted Neumann, and having nothing original to report on this subject, I will content myself with giving you an account of his methods.

INDICATIONS FOR THE OPENING OF THE MASTOID UNDER LOCAL ANESTHESIA IN ACUTE MASTOIDITIS.

This method is only applicable in cases in which there is no subperiosteal abscess. Under the latter condition, the pressure in the abscess cavity forces the fluid out of the passage formed by the needle, instead of being absorbed by the tissues.

Local anesthesia is contra-indicated in very nervous people. It is especially suitable in all cases with failure of compensation, advanced pulmonary tuberculosis, acute lung affection, diabetes and nephritis; in short, in all cases in which a general anesthetic is contra-indicated. The patient is prepared and shaved as usual. Reclus thinks it is specially important that the patient should have a good meal before the operation. Under this condition, he states, that no symptoms of poisoning appear.

The solution for injection consists of 5 c.c.m. of 1% cocaine, 12 drops of adrenalin, and 3 c.c.m. of physiological salt solution. This mixture should not be boiled. Following Braun's method, it is warmed to body temperature. Any small syringe is suitable, provided it has a strong needle. A good deal of the success of this operation depends upon the position of the injections. One must bear in mind where one does the most chiselling.

Five injections in all are made—three over the planum mastoideum and two on the anterior surface of the mastoid process.

Care must be taken to make the infiltration *directly over the bone*. This is easily accomplished when the periosteum is only slightly adherent. It is much more difficult however, when it is