SUMMARY

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The aim of this work is to study effect of different anaesthestic techniques on the auditory acuity.

The study was conducted in 120 patients who were proved to be clinically free otologic disease. The patient had performed non otological surgery. They divided into four equal groups :

Group I

Cosisted of 30 patients who were anaesthestized by nitrous oxide. Their age ranged between 12 and 50 years.

Group II

Consisted of of patients who were anaesthestized by spinal intradural anaesthesia. Their age ranged between 14 and 51 years.

Group II

Consisted of 30 patients who were anaesthestized by spinal epidural anaesthesia. Their age ranged between 11 and 47 years.

Group IV

Consisted of 30 patients who were anaesthestized by Ether. Their age ranged between 13 and 50 years.

In all four groups, audiogram was performed before the operation, after the operation by 24 hours and after the operation by 72 hours.

After nitrous oxide anaesthesia by 24 hours, the audiogram showed significant -P<0.05- hearing loss for all. But after the operation by 72 hours the hearing was improved and the loss became non significant. This phenomenon can be explained by the fact that N20 diffuses rapidly into the middle ear causing increasing in its pressure which will causes some hearing loss.

The audiogram which taken after 24 hours for the cases who were anaesthestized by spinal intradural anaesthesia, showed a significant -P<0.05 hearing loss in 76 % of the cases. After 72 cases, the audiogram showed improvement of the hearing of these cases.

Significant hearing loss -P< 0.05- was also shown by audiogram taken 24 hours after the spinal epidural anaesthesia, in 73 % of the cases. The hearing loss in those 22 cases improved 72 hours after the operation and the loss became non significant -P> 0.05- shown the audiogram. This hearing loss affects mainly the low frequencies. This result can be explained by the fact that spinal puncture and injection cause changes in the pressure of the C.S.F. These change will be transmitted via the cochlear aqueduct to the

cochlear perilyph causing distotion of the basilar membrane mainly at the apex of the cochlea, this is the thinest and broadest part of the membrane and responsible for perception of low frequencey acoustic stimuli. anaesthesia by ether had no effect on auditory acuity as proved by the audiometry.