The Technique of Performing the Caloric Test

H.

Hamersma

Pretoria, Ear, Nose and Throat Clinic, Wilhelmina Gasthuis, Amsterdam [Director: Prof. Dr. L. B. W. Jongkees]

Author's address: Dr. H. Hamersma, E.N.T. Department, Wilhelminagasthuis, Amsterdam (Netherlands)

A comparative study was made between the caloric test performed according to the techniques described by Cawthorne, Fitzgerald and Hallpike (1942) and Veits and Kosel (1930). Ten normal test subjects of both sexes and various ages were examined by both methods and the nystagmus recorded behind closed eyes. The eye movements were recorded according to the technique described by Aschan, Bergstedt and Stahle (1956). The eye speed was recorded simultaneously according to the method described by Henriksson (1955). The thermic stimulation used was 250 c.c. water of exactly 7° G below and 7° C above body temperature irrigated for 30 seconds.

The following properties of the nystagmus were measured: (a) duration; (b) total amplitude; (c) total number of beats; (d) maximum speed of the slow phase, and (e) latency.

Hamersma, The Technique of Performing the Caloric Test 435

Results.

The speed of the slow phase reached the same maximum value in both methods (mean maximum speed 22°/sec).

The duration differed. Mean values: Hallpike 223 seconds, Veits 175 seconds. This was probably due to the fact that the nystagmus was allowed to begin at a later stage in the Veits method, while the duration of the temperature gradient in the temporal bone was the same in both methods. This fits in with the calculations by Schmaltz (1932).

The total amplitude and the total number of beats differed. Mean values: Total amplitude: Hallpike 955°, Veits 832°; total number of beats: Hallpike 174, Veits 157. This can be explained in the same way as in the case of the duration.

The movements of the test subjects' heads, which are necessary in the Veits method, often caused interference in the recording of the nystagmus. However, recording of the "true latency", for which the Veits method was designed, was often possible. Mean values: Hallpike 22 seconds, Veits 3 seconds.

Conclusions.

The Veits method was designed in order to measure the "true latency" of the vestibular organ when submitted to a thermic stimulation. However, the latency has not proved to be of importance in the diagnosis of vestibular pathology. Most test subjects found the Veits method more unpleasant than the Hallpike method although this can partly be due to the larger stimulation used in the experiments than in the original Veits technique. The Veits method often caused interference in the recording of the nystagmus. It revealed no advantages over the Hallpike method and the latter method is therefore recommended for routine clinical use, especially when recording the nystagmus.

References.

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