THE TREATMENT OF MÉNIÈRES DISEASE WITH STREPTOMYCIN.

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(Received March 9, 1961)

When streptomycin was introduced in the treatment of tuberculosis it became apparent that streptomycin had a toxic effect on the inner ear. It fell to the otologists to make observations as to the acoustic and vestibular damage during period. Furthermore while working on toxic effects of streptomycin on vestibular apparatus, it occurred to otologists that this drug might be used to prevent the attack of vertigo in méniére's disease.

In the present paper I report two cases of ménière's disease which treated with streptomycin.

Case 1. Mr. S.O., aged 35, who was first seen on July 20, 1948, gave the following history. The patient had had the first attack of vertigo about seven months before while on board ship. He experienced vertigo with nausea, vomiting and hearing loss with tinnitus on the left ear. These attacks were presenting once or twice a month at their onset. Recently for five weeks the attacks had become rather frequent, occurring daily during the week preceding this first visit. He had been given treatment in the form of subcutaneous injections twice weekly for several weeks. He stated he was better while receiving these injections and that following discontinuance of treatments, the attacks securred with increased frequency.

The general physical examination was nagative. The neurological report showed no disease. The nose, throat and larynx were normal. The audiogram showed a marked reduction of hearing in the left ear; the vestibular tests showed no response by 20 seconds cold caloric stimulations in the vertical canal. In the horizontal canal the latent period of nystagmus developed in 59 sec. and nystagmus was maintained 24 sec. The right ear was normal in hearing and vestibular function.

On July 24, 1948, the patient was placed on 2 grams of streptomycin daily divided into four doses. On August 10, the caloric tests show no response from either the vertical or horizontal canal on the left ear. Four days later the patient was again examined with caloric stimulation 30 sec; again there was no response from either the vertical or horizontal canal on the left side. He had been on treatment for 20 days and at this time it was discontinued. Meantime the right ear was still normal in both canals. Streptomycin has a selective action on the normal labyrinth but a greater selective action on the labyrinth in endolymphtic hydrops. The patient received treatment for 20 days, a total of 40 grams of streptomycin. In my expe-

rience of the toxic reaction of streptomycin in patients with tuberculosis, seduced function occurred during the fourth or fifth weeks, these patients having received 70 to 84 grams of streptomycin.

Three facts happen according to the amount of streptomycin a patient receives. First, a relative small amount may produce destruction of the vestibular function in an ear affected with endolymphatic hydrops. Second, a large amount will destroy the vestibular function of a normal vestibular apparatus. Third, cochlear damage with deafness follows a still large daily and total dose.

Seventeen months after treatment of streptomycin the patient was examined. The cold caloric tests showed a good response with 20 sec. in the right ear and no response with the 3 minutes cold caloric stimulation in the left ear. Two years after treatment of streptomycin the patient had had two attacks of vertigo lasting a few minutes. He does not get sick from the attacks now. Hearing is the same to previously.

Case 2; H. M., aged 40, was first seen in Jan., 1948. In 1944 while unloading cargo the patient had the first attack of vertigo with vomiting lasting about 2 hours, had tinnitus on the right ear and a sensation of extreme pressure over the frontal area. During past year the attacks have recurred two or three times a month. Since the first, the attacks have been rather mild in character, the tinnitus being most annoying. Between attacks he has difficulty weaving his way in a crowd or assuming a sudden change of position. He has noted that drinking will precipitate an attack. The audiogram shows a marked reduction in hearing in both ears.

The vestibular tests with cold caloric stimulation for 20 sec. brought no response in the vertical canal of the right ear. In horizontal canal the nystagmus developed in 45 sec. and was maintained for 22 sec. There was no response to stimulation of the vertical canal of the left ear, while there was a response occurring in 24 sec. and maintained for 88 sec. in the horizontal canal. The attacks of tinnitus were severe but the vertigo rather mild.

Streptomycin treatment was started on Jan. 20, 1948 and discontinued 50 days later, at which time I could obtain no response with three minutes stimulation of any of the canals. The patient was examined fifteen months after treatment. Caloric tests with 20 sec. stimulation showed no response in the right ear and no response in the vertical canal of the left ear. From the left horizontal canal nystagmus developed in 36 sec. and was maintained for 28 sec. After 3 minutes cold caloric stimulation nystagmus was maintained for 32 sec. from the stimulation of the right vertical canal and 46 sec. from the left. The function of both canals of the right ear and the vertical canal of the left ear is reduced. The left horizontal canal, however which was the normal canal at the time treatment was started, still has very good function. The audiogram shows a considerable return of the lost hearing since the treatment was complete; There is a loss of 63.5 % in the right ear and 46.4 % in the left.

SUMMARY

Two cases of méniére's disease have been treated by streptomycin with good results.

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