A Case of Recurrent Cerebrospinal Fluid-Middle Ear Effusion Caused by Habitual Valsalva’s Maneuver

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We report herein on a case of recurrent cerebrospinal fluid (CSF) leakage from the different bony defects of the tegmen of the middle ear caused by habitual Valsalva’s maneuver at about a seven-year interval. A 47-year-old man consulted the otorhinolaryngological department of the NHO Kure Medical Center complaining of left ear fullness. Three weeks before he had caught a cold and had repeated Valsalva’s maneuver to reduce the ear fullness. Two weeks previously he recognized watery rhinorrhea just after he heard sound of air in the left ear. A week previously he had consulted an ENT clinic and middle ear effusion of the left ear was discovered. The patient was referred to our department as possibly having recurrent CSF-middle ear effusion, for he had had a past history of CSF-middle ear effusion about 7 years previously. At that time the first surgery was performed to treat the CSF. The surgery revealed a bony defect in the mastoid tegmen and the defect had been closed with cortical bone, bone paste, and periosteum. Three weeks after the consultation the second surgery was performed. The surgery revealed another bony defect in the epitympanic tegmen and no defect in the mastoid tegmen. The defect was closed in the same way as the first surgery. Detailed questioning revealed that the patient had had a habit of performing Valsalva’s maneuver before the first onset. We suspect that continual or intermittent positive pressure to the middle ear due to habitual Valsalva’s maneuver may cause the thinning or the disappearance of the bony wall of the middle ear.

Keywords : cerebrospinal fluid, middle ear effusion, Valsalva’s maneuver, CSF, CSF-middle ear effusion

References

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The 1st surgery
The 1st surgery revealed a bony defect (a, b) in the mastoid tegmen. The defect was closed with 2 pieces of cortical bone (c), bone paste (d), and 2 layers of periosteum (e, f).

The 2nd surgery
The 2nd surgery revealed another bony defect (indicated by black arrows) in the epitympanic tegmentum (*) and no defect in the mastoid tegmentum (a). The defect was closed in the same way as the 1st surgery (b-f). The broken circle (a) shows the region of the former bony defect.