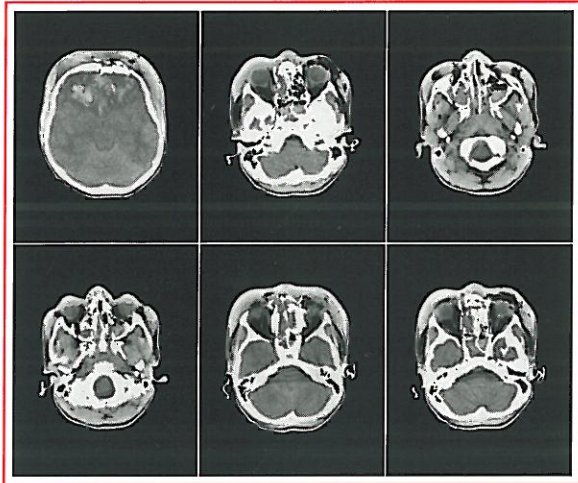


Recovery of auditory function in serious post-traumatic lesions of middle ear. Therapy and tubal re-education with OTOVENT® : case history

Pierpaolo Piras

Otolaryngology Division - SS. Trinità Hospital - Cagliari, Italy



In this case history, patient G.R. experienced a very serious cranial trauma subsequent to a road accident and had to be hospitalized in an intensive care unit, as he was profoundly comatose.

The CAT-scanning of patient's skull evidenced the following:

a comminuted split fracture of left paramedian frontal bone with a rough bone fragment slightly hollowed, associated to a split fracture of frontal sinus walls; a bilateral fracture of orbit ceiling, involving cribriform plates and ethmoid septum and extended to right sphenoid ala magna, right sphenoid body and pterigoid process; a hollowed, split fracture of nose septum, nose bones and right maxillary sinus anterior and posterior walls, associated to haemosinus (see CAT-scanner image).

As from the accident, patient showed a symptomatology featured by a markedly lowered right side vestibular reflex with serious homolateral hypoacusia of transmissive type.

OTOVENT® (Abigo, Sweden) is a nose-inflatable latex balloon for medical purposes, capable to restore middle ear normal ventilation after an impairment resulting from phlogistic, physical or degenerative affections. The OTOVENT® Method is to integrate any pharmacological, surgical or thermal treatment plan, as well as the tubal re-education plan, set up by a specialist physician. OTOVENT® is calibrated in such way to exert a physiological pressure capable to ventilate patient's middle ear through the eustachian tube. OTOVENT® should be inflated with one nostril until a grapefruit size is met, while the contralateral nostril should be held; after that, the balloon should be let free to deflate inside the nose. The operation should then be repeated with the other nostril (previously held). Insufflations, one for each nostril, should be actuated thrice a day (morning, midday and evening hours) and each balloon should be used for no more than 3 days (i.e. 18 insufflations). One OTOVENT® package provides a complete treatment covering 15 days. Treatment should be periodically repeated to maintain the improvement achieved. The efficacy of the OTOVENT® Method is assured only for constant and regular applications.

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The efficacy of OTOVENT® as an adjuvant in the treatment of middle ear phlogistic and degenerative affections has been evidenced in a large number of investigations. Particular consideration should be given to this case history because of the severity of auditory lesions and subsequent recovery of patient's auditory function that resulted from the use of OTOVENT®.

The medical case: patient G.R. never suffered from diseases that could pathologically affect the auditory organ, nor did he make use of ototoxic drugs.

At the age of 17, he was run down by a car and had a large number of cranial fractures.

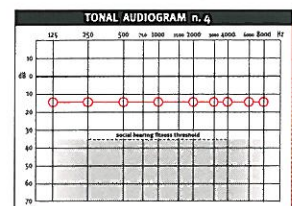
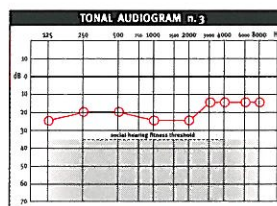
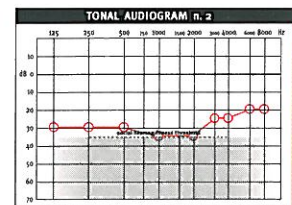
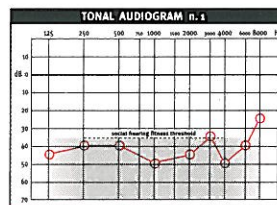
It is recognized that violent cranial traumas may result into serious lesions of the anatomic structures in the auditory organ.

In this case, the computed axial tomography carried out in the course of the intensive care unit hospitalization evidenced also a right temporal bone fracture with blood effusion into the tympanic cavity.

About thirty days after patient had become comatose, a very serious right side pantonal hypoacusia of transmissive type with an acoustic threshold of 50 dB (audiogram No. 1) was diagnosed.

Such a hypoacusia seems to be subordinate to the trauma that brought a phlogosis, haemorrhage and cicatricial outcomes to patient's right ear.

Initially, the otoscopic examination showed that the right tympanic membrane was severely opacified and retracted. Repeated medical treatment based on the administration of antibiotics, antiphlogistic and antiscarring drugs led to no therapeutic effect.



Results: 20 days after the application of the OTOVENT® Method, consisting of one insufflation for each nostril thrice a day, a 20 dB improvement of the acoustic threshold was promptly noticed.

After twelve months of continuous treatment, audiometric tests (see audiograms Nr. 2 and 3) revealed that the normalization of the auditory function had been achieved.

Two years after the trauma and one year after the withdrawal of OTOVENT®, patient's right ear was found normoacoustic (see audiogram Nr. 4).