

Auditory pathway tumors acoustic neuronema or vestibular schwannoma (vs) - Dr. Orfila Daniel

VS are the most frequent benign intracranial tumors (8%) that originate in the vestibular nerve sheath (8th cranial nerve), generally within the Internal Auditory Canal. Autopsy studies in Japan found 1% of VS and 2% in other statistics, with patients generally being asymptomatic. Any unilateral symptomatology related to the inner ear, such as sensorineural hearing loss, tinnitus, dizziness, instability, or vertigo; should be studied by Magnetic Resonance Imaging (MRI) with intravenous administration of Gadolinium . Regarding their size, according to the Hannover classification (Sammi - Koos), they are classified as: 1st Degree (Small - intracanalicular), 2nd Degree (Medium - already appearing within the Pontocerebellar Angle - APC), 3rd Degree (Large - contact the brain stem in the APC), 4th Degree (Giant - compress and displace the brain stem in the APC), generating neurological symptoms of intracranial hypertension with compression of neurostructures , and risk of life. From 2000 to 2023, we have operated on 670 patients for SV at FLENI and we have observed a change in the presentation modality of this tumor pathology, which motivated its dissemination in several national and Latin American ENT congresses, warning that: “In recent years, SVs appear in younger people, they are larger, with a compressive effect on the brainstem (protuberancial area), and with the consequent greater “morbidity and mortality” in their only curative treatment, which is their surgical removal, for large SVs. In summary: more SVs, more Large (3rd degree) and Giant (4th degree) tumors and in younger patients. And 55% of them were suffered by patients under 50 years of age.

It has already been proven that non-ionizing radiation acts by cumulative effect and is also CO-carcinogenic, although the WHO classified it in 2011 as category 2B, and is awaiting a more realistic categorization arising from so much scientific literature. To this end, our statistics on patients operated on at FLENI are presented, and it is important to observe the subpopulation of those operated on from 2010, of which 90% were large and giant SVs. These tumors currently show an atypical and faster growth than in the years before 2000, where large tumors (Grade 3 and 4) were almost exclusively seen in elderly patients, either due to a delay in consultation or in diagnosis, with NIR being the only new cause that burst into the life of the planet, which has already been strongly proven, both in tissue studies, in laboratory animals (rats in the NTP-USA study and Ramazzini Italy) and in observational statistical work in populations of patients exposed and not exposed to NIR from cell phones. Those carried out by Lennart stand out. Hardell (Sweden-2013 - 2017) and Christopher Portier (USA- 2019), following the principles of "causality" recommended by Sir. Bradford Hill (1965), where

both authors verify a strong relationship between Electromagnetic Fields of cell phones, cell phone antennas, Wifi and the appearance of brain tumors, including ACOUSTIC NEURONAMA, in addition to high-grade brain gliomas" In the one carried out by Dr. Lennart Hardell from 2013, updated in 2017, carried out a detailed study between the appearance of SV and the rate of cell phone use, with a conclusive relationship, with an OR association of 1.5 that increases to 8 with greater accumulated time of use. In the statistics of our FLENI SV surgery team (work in press), composed of Neurosurgeon Dr. Andrés Cervio and Neuro -otologists Dr. Daniel Orfila and Dra. Liliana Tiberti , taking a sample of only Giant SV (4th degree) operated from 2008 to 2023, out of a total of 170 surgeries performed, and taking those defined by a strict follow-up criterion (n = 133 SV), after analyzing multiple variables that are omitted in this presentation, we can demonstrate: a shorter time of presentation in the classic preoperative symptoms (unilateral hearing loss, unilateral tinnitus and instability), being only 12 months (range 8 to 24 months). This variable demonstrates the rapid tumor growth, in addition to a manifest younger age of the patients for giant tumors (4th) being 49 years of age on average with a range of 28 to 59 years of age. Similar observations to ours were made by the Neurosurgery team at the "El Cruce" Hospital in Florencio Varela, Dr. Jorge Lambre and Dr. Nadia Morales.

In summary, it is concluded that there is a clear increase in the number and size of VS, with a shorter duration of clinical symptoms, and presentation in younger people, which requires greater health expenditure in terms of studies, treatments, and postoperative rehabilitation. The larger the tumor size, the greater the deficits of cranial nerves compromised by the tumor in the APC, and the greater the morbidity after treatments.

MEASURES TO BE INDICATED BASED ON THE PRECAUTIONARY PRINCIPLE, IN THE MEDICAL CONSULTATION

- ☐ In babies and children, the use of this technology (cell phones and tablets) is not recommended, due to greater irradiation of the skull.
- ☐ Do not keep mobile devices (cell phone, tablet , etc.) close to the body surface, minimum distance 15 cm
- ☐ Answer or make calls through the speaker.
- ☐ Use of wireless headphones is not recommended, pause them until the diagnosis of EHS is ruled out.
- ☐ If the use of headphones is essential, choose wired ones or ones with an air tube at the earpiece end.

☐ Mobile devices should be charged outside the room/bedroom where you are staying, and do not use the mobile phone while this process is taking place.

tablet , notebook) is required for reading or audiovisual playback, do so by downloading the files and while the content is being accessed, put the device in Airplane mode.

☐ It is ideal for adults and even more so for children to use it in Airplane mode to listen to music, play games, watch videos. Download the content to the device memory beforehand and put it in Airplane mode.

☐ Do not remain in the near field of electrical appliances (microwave oven) during operation. (the near field is understood as the magnetic bubble that emanates from it, depending on its disturbance area according to the particular device)

☐ Ensure that every electrical outlet in your home is grounded.

☐ Wifi routers should be placed in rooms with little traffic and low occupancy, and turned off at night (they also generate RNI) .

☐ Put your cell phone in airplane mode or turn it off at night and while you are resting, avoiding having the device near your headboard or bed.

☐ The back of chairs, beds, and cots where you spend many hours a day should be moved away from the walls where the electrical wiring runs, especially when it is at the height of the craniocervical surface .

☐ Limit cell phone use to areas with good signal reception, since the lower the signal, the more radiation the devices emit, such as elevators, cars, subways, public transportation such as highways and rural areas.