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Case Report

Vestibular schwannoma; dramatically response of facial Pain to carbamazepine and psychotic symptoms after tumor removal

Running Title: Vestibular schwannoma, carbamazepine and psychosis

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Abstract

Medical problems are common in psychiatric patients, especially in patients with schizophrenia, so more attention should be considered. Benign tumors such as Vestibular Schwannoma (VS) are also a rare condition that may occur in psychiatric patients. This study presented a 36-years-old married woman known case of schizophrenia and with cerebellopontine angle (CPA) following atypical facial pain. This study aims to draw the attention of physicians, psychiatrists, mental health personnel, and internal care to the physical and medical issues of chronic psychiatric patients. In addition, misdiagnosis in these patients can cause more problems, and drug-drug interactions can be important.

Keywords: Vestibular Schwannoma; Schizophrenia; Pain; Misdiagnosis

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Introduction

Numerous medical problems are common in patients with schizophrenia (1). One of these problems is Vestibular Schwannoma (VS) or acoustic neuroma, a rare condition as a benign tumor without spread to other brain areas. Sensory neural hearing loss has been reported in most patients with VS (2, 3). Calcification in VS is closely related to its tissue and blood supply, affecting the surgical removal of the tumor (4). VS is often acoustic neuroma, a common tumor of the cerebellar angle (CPA) (5, 6). Calcification has been found in CPA tumors such as meningioma, cavernous angioma, ganglioglioma, and solitary fibrous tumors are (5- 9).

Although the case in question was schizophrenia and then CPA tumor, acoustic schwannoma may be significantly associated with psychiatric symptoms and schizophrenia spectrum disorders. But, psychiatrists have not yet reached a consensus (10- 12).

One of the most important serious side effects of Clozapine, as an atypical anti-psychotic in refractory patients is agranulocytosis, which should be considered by physicians and psychiatrists (13). Carbamazepine is one of the drugs that can suppress bone marrow and interact with Clozapine The case study used clozapine and carbamazepine to treat the symptoms of schizophrenia and calcification due to atrial schwannoma. Concomitant use of carbamazepine and clozapine in patients with schizophrenia may cause complications, possibly one of which is agranulocytosis (14, 15).

Case presentation

The patient is a 36-years-old right-handed married woman known case of schizophrenia. A psychiatrist examined the case in 2019 in Roozbeh Hospital in Tehran. Most of the basics were treated with antipsychotic drugs based on the patient's drug history. The history showed the drugs that the patient consumed included quetiapine, risperidone, trifluoperazine, and sodium valproate. The patient had been diagnosed with schizophrenia paranoid type since 2015, and the psychiatrist had prescribed clozapine since 2019. The patient complained for several months before the accelerated facial pain. The psychiatrist did not accurately assess the patients' condition and considered it as somatic pain. He received only the same psychiatric medication, including clozapine (**Figure 1**). A dentist will examine the patient, and started carbamazepine. After doing brain magnetic resonance imaging (MRI), a mass was been detected in the cerebellopontine angle (CPA). Finally, when the tumor was removed by surgery, facial pain was completely alleviated. Also, the psychiatric symptoms, including sensory misperception and sleep disturbance, were significantly subsided.

Discussion

The current patient complained of facial pain due to a tumor in the CPA. The relationship between this finding case is also mentioned as a diagram (**Figure 1**). VS is commonly referred to as acoustic neuroma, a common tumor of the CPA. A similar case was reported in a 28-year-old woman with schizophrenia with cystic VS with

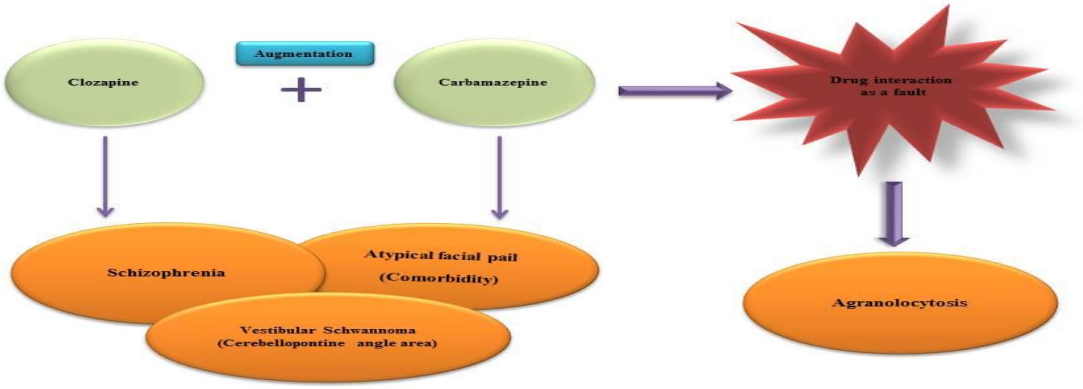

Figure 1. Relationship between the data mentioned in the case

tinnitus and dizziness. There may be a link between schizophrenia in this case and the tumor created (16). In our case, when the tumor was removed, the fascial pain was subsided, and his psychological symptoms decreased significantly. As a result, some of the patient's psychological symptoms may be related to the tumor in this area (17). Removal of the tumor may ultimately resolve the psychiatric or behavioral symptoms. Otherwise, decreasing the size of the tumor or halting its growth may also reduce these symptoms. Additionally, treating the acute mass effects such as increased intracranial pressure or hydrocephalus may improve cognitive functioning and decrease behavioral symptoms (18). However, we do not have accurate information about the exact points of the tumor on the patient's nervous system. It should be noted that concomitant use of clozapine and carbamazepine will be contraindicated, and if carbamazepine is administered, clozapine should be replaced with another antipsychotic drug (14, 15).

Conclusion

As mentioned above, there may be an addictive link between a tumor in the CPA and some psychiatric symptoms and facial pain. The purpose of this report is to inform physicians, psychiatrists, mental health, and internal medicine staff about the comorbidity of rare conditions like tumors that can produce somatic symptoms that confuse psychiatrists. Also, be aware of changes in ongoing symptoms or new symptoms in these patients so that they are not unaware of any organic disease. Preventive measures to improve the behavior and health of these patients will require further studies.

Ethical Code

This study received the Ethics ID (IR.SSU.REC.1400.172) by the Ethics Committee of Yazd University of Medical Sciences.

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References

1. Fakra E, Azorin J-M. Clozapine for the treatment of schizophrenia. Expert opinion on pharmacotherapy. 2012;13(13):1923-35.
2. Gopalakrishnan C, Shrivastava A, Nair S. Calcification in vestibular schwannoma: report of two cases and review of the literature. Neurology India. 2011;59(4):642.
3. Katoh M, Aida T, Imamura H, Aoki T, Yoshino M, Kashiwazaki D, et al. Calcified vestibular schwannoma in the cerebellopontine angle. Journal of Clinical Neuroscience. 2007;14(12):1207-9.
4. Zhang Y, Yu J, Qu L, Li Y. Calcification of vestibular schwannoma: a case report and literature review. World journal of surgical Oncology. 2012;10(1):1-7.
5. SASAKI T, SASAKI T, OKAMOTO K, ISHIDA T, KIRINO T. Cavernous Angioma of the Internal Acoustic Meatus—Case Report—. Neurologia medico-chirurgica. 1999;39(12):847-51.
6. Wu E, Tang Y, Zhang Y, Bai R. CT in diagnosis of acoustic neuromas. American journal of neuroradiology. 1986;7(4):645-50.
7. Milligan BD, Giannini C, Link MJ. Ganglioglioma in the cerebellopontine angle in a child: case report and review of the literature. Journal of Neurosurgery: Pediatrics. 2007;107(4):292-6.
8. Biggs ND, Fagan PA, Turner JJ, Doust B. Solitary fibrous tumor of the cerebello-pontine angle. Skull base surgery. 1999;9(04):295-9.
9. Sabolch AN, Quint DJ, Zahuranec DB. Calcified brainstem cavernoma in a patient with hundreds of intracranial cavernomas. The neurologist. 2010;16(6):379-83.
10. Bracha HS, Livingston RL, Clothier J, Linington BB, Karson CN. Correlation of severity of psychiatric patients' delusions with right hemispatial inattention (left-turning behavior). American Journal of Psychiatry. 1993;150:330-2.
11. Galderisi S, Maj M, Mucci P, Monteleone P, Kemali D. Lateralization patterns of verbal stimuli processing assessed by reaction time and event-related potentials in schizophrenic patients. International journal of psychophysiology. 1988;6(3):167-76.
12. Klein C, Berg P, Rockstroh B, Andresen B. Topography of the auditory P300 in schizotypal personality. Biological Psychiatry. 1999;45(12):1612-21.
13. Meltzer HY. Role of clozapine in treatment-resistant schizophrenia. Therapy-Resistant Schizophrenia. 26: Karger Publishers; 2010. p. 114-28.
14. Junghan U, Albers M, Woggon B. Increased risk of hematological side-effects in psychiatric patients treated with clozapine and carbamazepin? Pharmacopsychiatry. 1993;26(06):262.-
15. Krupp P, Barnes P. Leponex-associated granulocytopenia: a review of the situation. Psychopharmacology. 1989.
16. Urbahnke J, Rohde M, Rasmussen B, Krone W, Jafari AA. Vestibular schwannoma as possible cause for auditory hallucinations in a woman with schizophrenia. Ugeskrift for laeger. 2019;181(46.(
17. Jiang X, Chen Y, Zhou Z, Luo L, Hu W, Zheng H, et al. Surgical resection of pineal epidermoid cyst contributed to relieving schizophrenia symptoms. World neurosurgery. 2018;113:304-7.
18. Hales RE. The American psychiatric publishing textbook of psychiatry: American Psychiatric Pub; 2008.