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Case Report

Anton syndrome during oxygen-ozone therapy

Abstract

Ozone (O_3) gas is a molecule that consists of 3 oxygen atoms, found out in the mid-19th century [1]. Ozone gas preserves humans from detrimental influences of ultraviolet radiation [1]. In spite of harmful effects of O_3 gas, investigators think that it has excessive curative effects [1]. Nowadays, O_3 therapy is used for many fields of medicine in precise therapeutic doses [1,2]. It is known that O_3 therapy is helpful in dental procedures, cerebrovascular diseases, tinnitus, acquired immunodeficiency syndrome, hypercholesterolemia, sensorial hypoacusis, senile dementia, multiple sclerosis, irradiation sensitive tumors, herpes simplex and herpes zoster virus infections, muscular hypertonia, and chronic otitis media, etc.[2]. The complications and disadvantages of O_3 therapy could be observed in the future. Herein, we presented a case of ischemic stroke after an oxygen-O_3 therapy, which is called also Anton syndrome.

A 36-year-old woman admitted at the emergency department with nausea and vomiting for 16 hours in addition to sudden onset of bilateral blindness and loss of strength for 6 hours. The patient had been taking inhalation oxygen-O_3 therapy for 1 week for tinnitus and hearing loss based upon Meniere disease. The patient's vital signs and laboratory examinations were in reference ranges. At admission, the patient was disoriented and unconscious. The neurologic examination revealed loss of strength at right inferior and superior extremities, dysartrhia, and bilateral cortical blindness. Electrocardiography showed normal sinusal rhythm. A computed tomographic scan showed hypodense areas in right occipital region and left thalamus region. And also, it showed hypodense area in the right cerebellar hemisphere. There was no signal of recent ischemic or hemorrhagic stroke. Diffusion-weighted magnetic resonance imagining showed acute diffusion restriction in cerebello-occipital and left thalamus regions (Figure). The patient was hospitalized in neurology intensive care unit for 14 days. The patient is still on physical therapy program in our hospital for 26 days.

The use of oxygen-O_3 therapy is prevalent, and manifold methods of this therapy are used in otorhinolaryngology [2]. It is known that oxygen-O_3 air therapy is the most common method [2]. The other techniques to supply O_3 therapy are rectal, vaginal, and ear insufflations; injection to veins, joints, muscles, and tumors; and bagging of the use of ozonated water and oil orally and externally [2].

Bilateral cortical blindness that called Anton syndrome is generally seen after an ischemic stroke [3]. Bilateral infarcts of posterior cerebral arteries are associated with Anton syndrome, and primary visual cortex and visual association area effect from these infarcts [3].

In 2004, Corea et al [4] reported a 66-year-old-woman who is the first case of ischemic stroke after medical oxygen-O_3 therapy. In that case, hypoperfusion of basilar artery was called Anton syndrome. Spontaneous bilateral infarct of posterior cerebral artery is commonly associated with embolism or a thrombus from basilar artery [4]. In our case, there was not any risk factor that could be associated with ischemic stroke, and our case is similar with the case that Corea et al [4] reported.

We thought that this case report indicates the importance of the possible complications of oxygen-O_3 therapy. This therapy method should be investigated in detailed to avoid serious complications.

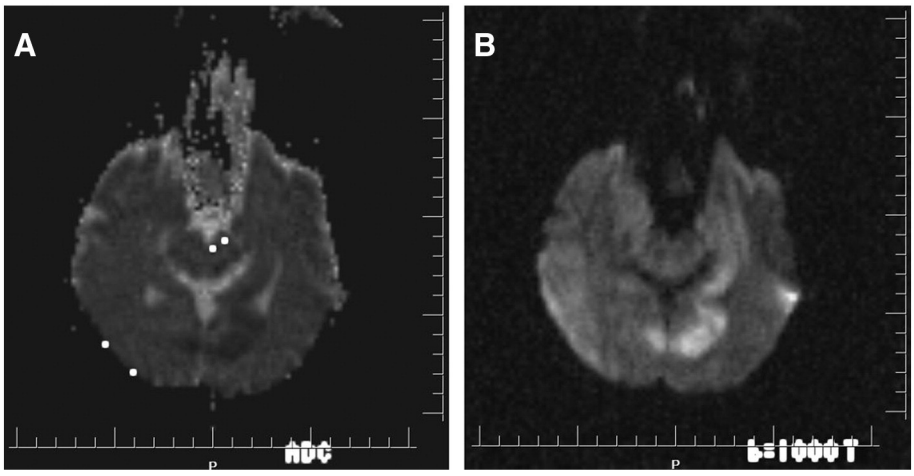

Figure. Diffusion-weighted magnetic resonance imagining shows diffusion restriction in cerebello-occipital and left thalamus regions.

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