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Case Report

세포교정영양요법(OCNT)을 통한 비문증 개선 사례 보고

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A Case Study on the Improvement of Floaters through Ortho-Cellular Nutrition Therapy (OCNT)

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ABSTRACT

Objective: The vitreous body is a transparent structure composed of water, collagen, hyaluronic acid, and glycoproteins. It plays a crucial role in maintaining the shape of the eye and ensuring clear vision. In this area, the formation of foreign bodies due to fibrous aggregation, posterior vitreous detachment (PVD), retinal detachment, and other factors is referred to as floaters, where the patient perceives particles floating in the field of vision. Although this symptom may not require special treatment in some cases, it can lead to vision deterioration and cause discomfort in daily life when severe. Therefore, it is necessary to assess the severity of symptoms through clinical consultation and fundus examination and apply appropriate treatment accordingly.

Case Report: The patient in this case study is a male Korean in his sixties who initially experienced intermittent symptoms of floaters. Over time, the severity of the symptoms increased, leading to decreased vision and dry eyes. Therefore, Ortho-Cellular Nutrition Therapy (OCNT), which included anthocyanins, collagen, hyaluronic acid, carotenoids, and bromelain, was applied to this patient. As a result, after approximately one month, the symptoms of floaters significantly improved, and the patient reported improvements in vision and alleviation of dry eyes with continued OCNT.

Conclusion: This case study demonstrated that appropriate OCNT may help improve symptoms in patients with floaters. However, as this study was conducted on a single patient, its applicability to all floater cases is limited. Further research is needed to establish tailored OCNT protocols based on individual patient conditions.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), Floaters, Decreased visual acuity, Posterior vitreous detachment

Introduction

The eye is an organ responsible for receiving visual information and comprises the cornea, lens, vitreous body, and retina. Among these, the vitreous body firmly supports the lens and retina, maintaining the shape of the eye and reducing oxidative stress, thereby protecting the eye from diseases such as cataracts. It consists of approximately 98% water, with the remaining components including collagen, hyaluronic acid, and glycoproteins, giving it a gel-like form rather than a completely liquid state.[1] Therefore, the vitreous body must remain transparent to ensure clear vision.

Floaters are described as seeing dust or small particles floating in the field of vision when the vitreous body becomes clouded with foreign substances. Although the exact causes and mechanisms to cause floaters remain unclear, several factors have been proposed. First, collagen and glycoprotein components inside the vitreous body can aggregate and form fibers, which can separate from the surrounding fluid, causing the vitreous body to undergo liquefaction. This liquefaction is known as the "vitreous body liquefaction." When the fibers generated during this process cause cloudiness in the vitreous body, shadows may be cast on the retina, leading to the perception of floating spots, streaks, or spiderweb-like structures in the visual field.[2]

Posterior vitreous detachment (PVD) occurs when the boundary between the vitreous body cortex and the retina

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separates and can also cause floaters. This symptom typically begins at the center and peripheral posterior pole of the retina and is one of the phenomena associated with the aging process. PVD can occur naturally due to aging or conditions such as myopia. However, when PVD occurs, condensed collagen fibers or glial tissue adhered to the optic nerve head may separate and float within the vitreous body. This can lead to the sensation of seeing dust or floating particles.[3] In particular, PVD can be accelerated in cases of ocular inflammatory diseases. In severe cases, it can lead to retinal conditions such as retinal tears, where holes form in the retina, or retinal detachment, where the retina separates from the inner wall of the eye. At this point, hemorrhaging within the vitreous body can occur, leading to the development of floaters and potentially resulting in decreased visual acuity.[4]

For symptoms like floaters, it is essential to determine whether treatment is necessary based on the severity, making it crucial to use various diagnostic methods. The basic approach involves a clinical consultation to assess the degree of foreign body sensation and vision as experienced by the patient. Additionally, the size and density of the floaters can be assessed through fundus examination using a fundus camera, slit-lamp microscopy, ultrasound, and optical coherence tomography (OCT). These methods help evaluate the severity of floaters and guide the decision for appropriate treatment. No special treatment is required if the floaters are not severe and do not significantly impact vision. However, if the symptoms are severe and cause significant discomfort or decreased vision acuity, treatment options such as vitrectomy, laser photocoagulation, or pharmacological vitreous liquefaction may be considered. However, these methods carry the risk of complications, including retinal damage and increased intraocular pressure.[5] Therefore, it is essential to carefully evaluate the cost-benefit ratio between treatment efficacy and potential side effects to improve the symptoms.

The patient in this case study initially experienced intermittent floaters, which progressively worsened, leading to dry eyes, decreased vision, and discomfort in daily activities. Consequently, OCNT was applied, resulting in an improvement of symptoms. With the patient's consent, this case study is being reported.

Case Study

1. Subject

This case study is based on one patient with floaters.

1) Name: Lee OO (62 years old / M)
2) Diagnosis: Floaters
3) Date of onset: Early 2022
4) Treatment period: January 2023 – July 2023
5) Chief complaints: Floaters, dry eyes, decreased visual acuity
6) Medical history: Pemphigus vulgaris
7) Social history: None
8) Family history: None
9) Current illness and medications: None

2. Methods

Table 1 provides a detailed description of the OCNT prescribed to the patient.

Table 1. OCNT administered to the patient

Months / Prescription	1	2	3	4	5 ~ 6
Cyaplex X powder	101	101	101	101	100
Collaplex powder	101	101	101	101	-
Caroplex capsule	202	202	202	202	-
EZplex capsule	202	202	101	101	-

100: One sachet/capsule, once a day in the morning; 101: One sachet/capsule, twice a day in the morning and evening; 202: Two sachets/capsules, twice a day in the morning and evening

Results

The patient visited the pharmacy due to discomfort caused by the sensation of foreign bodies floating in the eyes, dry eyes, and decreased vision. Therefore, OCNT was applied to improve the symptoms.

One month after the OCNT, the patient reported significant improvement in the sensation of foreign bodies in the eyes, as well as improvement in dry eyes and decreased vision symptoms. Additionally, the patient wished to continue OCNT, which was administered up to the 6th month, with significant improvement in symptoms compared to the initial state. The degree of symptoms experienced by the patient during OCNT is shown in Table 2.

Table 2. Degree of symptoms experienced by the patient during OCNT. A higher score from 0 to 5 indicates greater discomfort experienced by the patient.

Months / Symptoms	1	2	3	4	5 ~ 6
Eye floaters	5	2	1	0	0
Dry eyes	4	2	1	1	1
Decreased visual acuity	3	2	2	1	1

0: No symptoms and no impact on daily life; 1: Mild symptoms with little to no impact on daily life; 2: More noticeable symptoms with slight adjustment needed in daily life; 3: Symptoms significantly impact daily life and cause difficulty in performing some activities; 4: Severe difficulty in performing daily activities; 5: Discomfort in daily life with significant stress caused by symptoms

Discussion

The patient in this case study is a male in his 60s who initially experienced intermittent symptoms of seeing foreign bodies floating in front of his eyes. However, the symptoms worsened over time, leading to decreased vision and complaints of dry eyes. Upon clinical consultation, it was determined that the patient had previously suffered from pemphigus vulgaris, which is an autoimmune disorder affecting the skin and mucous membranes.[6]

Accordingly, the patient's immune function appeared compromised, and OCNT was prescribed considering this issue. The primary goals of the OCNT were to enhance

antioxidant and immune functions, alleviate the symptoms of floaters, and promote overall eye health.

Anthocyanins are abundant in berries and are known for their antioxidant properties that help eliminate reactive oxygen species and prevent DNA damage. They have been shown to increase blood flow in the retina, reduce oxidative stress, and contribute to protecting endothelial cells.[7] Additionally, anthocyanins can help enhance the overall immune response by strengthening T-cell immune reactions and boosting the phagocytic ability of macrophages.[8] Cyaplex X, rich in these ingredients, was prescribed to enhance the patient's overall antioxidant function and strengthen immune capabilities.

Collaplex powder is rich in hyaluronic acid and collagen. Collagen helps maintain the structural integrity of the vitreous body and prevents its liquefaction, while hyaluronic acid generates osmotic pressure, which is essential for maintaining the gelatinous state of the vitreous body. A deficiency of these components can lead to aggregation of collagen fibers and a decrease in osmotic pressure, compromising the gelatinous state and potentially causing the vitreous body structure to collapse. This increases the risk of posterior vitreous detachment (PVD), as well as retinal tears and retinal detachment, ultimately exacerbating the symptoms of floaters.[1] Therefore, appropriately supplying these nutrients can help maintain the structure of the vitreous body and play an essential role in improving the symptoms of floaters.

In addition to the formation and maintenance of the vitreous body structure, reducing the amount of foreign substances within the vitreous body would be necessary to improve the symptoms of floaters. In this regard, research related to the enzyme bromelain exists. Bromelain is an coenzyme extracted from pineapples and is known to exhibit anti-inflammatory, anti-thrombotic, and fibrinolytic activities in the body.[9] Administering an enzyme complex containing this enzyme to a group with vitreous body opacity symptoms resulted in improvements in the vitreous body opacity symptoms and subsequent vision enhancement.[10] EZplex contains various enzymes, including bromelain, which is believed to have improved the patient's floater symptoms. In addition, EZplex also contains mucin, a type of glycoprotein and one of the mucus components. Specifically, it plays a crucial role in forming the tear film in the eyes, maintaining ocular moisture, and defending against external contaminants.[11] Therefore, this ingredient likely contributed to improving dry eye symptoms as well.

The ingredients mentioned earlier were prescribed to improve the structural function of the vitreous body and reduce the foreign substances inside it. Also, OCNT was applied to improve the overall function of the eye. Various types of carotenoids were used for this purpose. Caroplex contains a range of carotenoids that can support eye health, including beta-carotene, lutein, zeaxanthin, and astaxanthin. Looking at the functions of each carotenoid, beta-carotene, as a precursor to vitamin A, helps neutralize reactive oxygen species and can assist in protecting vision.[12] Lutein and zeaxanthin can contribute to protecting the retina and lens from photochemical damage caused by light exposure, particularly blue light.[13] Finally, astaxanthin helps with antioxidant and anti-inflammatory effects, and a study has shown that it improves the stability of the tear film, which can also contribute to the improvement of dry eye symptoms.[14] Therefore, the carotenoid components mentioned above are considered to have contributed to improving the patient's overall eye health.

The patient in this case study initially experienced intermittent floaters, but the symptoms gradually worsened, accompanied by decreased visual acuity and dry eyes, significantly affecting daily life. Additionally, the patient had a history of pemphigus vulgaris, an autoimmune disorder. A customized OCNT was prescribed, considering the patient's medical history. As a result, the patient's floater symptoms significantly decreased, and the patient showed confidence in the treatment, continuing the OCNT, which significantly improved the discomfort experienced during daily life.

Nonetheless, this case study involves a single patient, so there are limitations to applying the findings to all floater patients. Therefore, when applying OCNT to other patients, it is vital to thoroughly consider the patient's symptoms, nutritional status, and other factors. However, the fact that a simple OCNT significantly improved the patient's floater symptoms and enhanced their quality of life is meaningful. Thus, this case is being reported with the patient's consent.

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