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Senile Scleral Plaque Evulation with Optical Coherence Tomography[1]

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Abstract

Senile scleral plaque sare characterized by calcified scleral degenerations seen in older ages. It can be confused with scleromalacia. In the stduy, scleral plaque evaluated with optical coherence tomographic images in a case.

Keywords: Senile scleral plaque, Optical coherence tomography, Hyaline plaque

Optik Koherans Tomografi ile Senil Plak Değerlendirilmesi

Öz

İleri yaşlarda görülen kalsifiye skleral dejenerasyonlarla karakterize senil skleral plak skleromalazi ile karıştırılabilir. Çalışmada bir olguda optik koherens tomografik görüntülerle skleral plak değerlendirildi.

Anahtar kelimeler: Skleral hiyalin plak, Optik koherens tomografi, Hiyalin plak

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Introduction

Senile scleral plaque (SSP) is age-related lesions characterized by calcified deposits seen in older age. SSP is seen as focal, non-raised, grayish-colored, and oval-shaped lesion near the horizontal rectus muscle. SSP is generally asymptomatic and benign lesion. Although SSP is detected as white bright lesions on computed tomography, it can be confused with other scleral disorders in slit-lamp examination and may rupture spontaneously in patients with multiple intravitreal injection. Therefore, it would be appropriate to use noninvasive methods in differential diagnosis (1-7). Optical coherence tomography (OCT) is a non-invasive ophthalmological examination method. It can give a real-time image of the target tissue (8). It was aimed to evaluate the ophthalmologic findings of SSP with OCT via the case report.

Case Presentation

A 75 years old female patient was admitted to Çanakkale 18 Mart Universtiy Opthalmology Clinic. An informed consent form was obtained from the patient. The patient complained of seeing black dots in both eyes for last few weeks. The patient had no systemic complaints other than hypertension and no history of eye trauma.

The patient was evaluated in terms of ophthalmology. Vision was evaluated using the Snellen decimal system. Vision with out glasses was 0.9 in the right eye and 0.9 in the left eye. Intraocular pressure was 16.14 mmHg in the right and left eyes, respectively. On biomicrobial examination, a hyperpigmented area located close to the medial rectus insertions of both eyes was seen. Area was not raised from the surface. Diameter was approximately 4x5 mm in the vertically and the horizontaly respectively (Figure 1). The conjunctiva on the lesion was mobile, but the lesion was fixed. Other anterior segment and fundoscopic examination findings were normal.

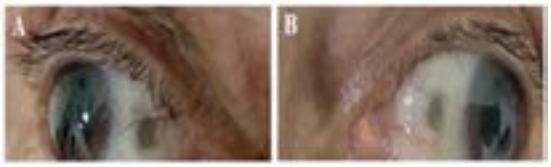

Figure 1. Images of scleralplaques in right (A) and left (B)
The patient's sclera was evaluated with anterior segment oct. Intrascleral hypo-reflective image consistent with the area detected on examination was seen in both eyes (Figure 2).

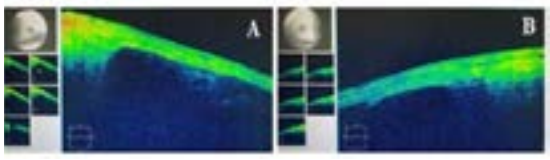

Figure 2. Anterior segment optical coherence tomography sections of scleralplaques in right (A) and left (B)

No fluid accumulation or thinning was observed around the lesion. Scleral plaque was also considered in the patient. The patient was called for control every 3 months. No change was detected in the lesion during the controls.

Discussion

SSP are usually bilateral, symmetric, well-bordered, a round-shaped, grey scleral discolorations found posterior to the limbus and anterior to the insertions of the horizontal rectus muscles with slighty depressed area. It is gray in color due to hyaline degeneration. Calcification of SSP is seen in less than half of the cases.

Calcified SSP can be confused for foreign bodies with analyzing the CT image. SSP are sometimes confused with post-scleritis thinning or scleral tumor, scleromalacia, scleral foreign body, and lymphoma (1-7).

The patient with SSP is asymptomatic, clinically insignificant and detectable on routine slit-lampbiomicroscopy ophthalmologic examination. The relationship of SSP with focal inflammation, systemic disease and trauma could not be determined. SSP is seen as anterior shadowing on USG, hypo-reflective appearance on OCT (8). Calcified SSP can be seen on an orbital CT scan (1-5, 9). The most important predisposing factors for SSP are a older age (over 70 years old), female sex, moderate to high myopia, and degenerative arthritis (2, 3, 9, 10). In histopathological studies performed on these plaques, it was found that the scleral thickness was normal or even slightly increased its typical histological finding is calcification and is thought to be the result of scleral hypocellularity (11). The pathogenesis of SSP is mains unclear. However, anterior scleral ischemia secondary to atherosclerosis, repetitive mechanical stress and tension on the sclera by horizontal rectus muscles, or ultraviolet damage by solar radiation to the sclera is supposed mechanisms (2, 3, 9).

The scleromalacia, spontaneous scleral rupture or scleral defect may rarely develop in the patients with calcified SPP.

Senile scleromalacia also occurs in older age and the same localization as SSP. However, the scleral defect here is covered by a thin layer of the conjunctiva. On the other hand, scleromalacia perforans often presents in patients with less older age, can involve any part of the anterior sclera, develops from a necrotizing scleritis, and is histologically characterized by necrosis of the affected sclera such that the lesion has poorly defined borders (1-7).

In the current case, the patient was older age and had hypertansion. The findings these can be considered risk factors. SSP was a in symmetrical location in insertion of both medial rectus muscles as usual.

SSP usually does not require treatment. If a scleral defect developed, it should be treated surgically with scleral graft placement (2, 3, 6, 7).

Optical coherence tomography is a usefull tool for imaging SSP. Additionally, it should be kept in mind that significant complications such as spontaneous scleral rupture may occur due to SSP especially in repeated intravitreal injections. Additionally, SSP calcification may complicate the ocular surgery by increasing scleral resistance to the incision.

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Author Contributions:

All authors have contributed to the concept and design, data collection, literature search in this work, and writing of the manuscript.

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