Central serous chorioretinopathy after nasal corticosteroids in the aviator

Chorioétinite séreuse centrale après corticoïdes par voie nasale chez l'aviateur

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Central serous chorioretinopathy (CSC) is a frequent unilateral maculopathy in young adults, characterized by an idiopathic retinal detachment of the neuroepithelium in the macular region. It is a multifactorial disease whose pathogenesis is still poorly understood [1]. Endogenous and exogenous glucocorticoids have been frequently implicated in the pathogeny of the CSC [1]. In the aviation medicine, where the nasal corticosteroids are commonly prescribed, CSC takes a particular importance and severity due to its negative impact on visual function of the pilot and flight status. We report the case of two pilots who developed CSC after the use of nasal steroids.

OBSERVATION N°1:

A 40 year- old male, airline pilot, consulted for a sudden decrease in visual acuity in the right eye and metamorphopsia lasting for four days. The patient was nonalcoholic, non-smoker, non-hypertensive, with no notable medical history. Questioning revealed the use of nasal corticosteroid for sinusitis 10 days before the onset of the symptoms. The visual acuity was 4/10 in the right eye and 10/10 in the left eye. The examination of the anterior segment was normal in both eyes. The glare test was disturbed as the test of the stereoscopic vision. Color vision was normal. Fundus examination detected a bleb of serous retinal detachment macular at the right eye. Fundus fluorescein angiography (FFA) showed macular leakage point (Figure 1). Coherence tomography (OCT) confirmed the diagnosis of CSC (Figure 2). The dosage of serum and urinary cortisol was normal.

The pilot was temporarily unfit and was treated by spironolactone (25 mg per day for 3 months) with eviction of all steroids and followed up every two weeks. The evolution was marked by a complete recovery of the visual acuity in the right eye, improvement of functional signs and normalization of stereopsis and glare test within six weeks. The optical coherence tomography (OCT) showed a total recovery of the serous retinal detachment bleb. One month later, the pilot has developed a recurrence of CSC in the same eye. He was prescribed inhibitor of carbonic anhydrase (acetazolamide 250 mg twice per day during fifteen 15 days, then one tablet daily for 15 days). The pilot was temporarily unfit and was removed from flight status for three months. He resumed his flight status after the normalization of visual function and total disappearance of functional complaints.

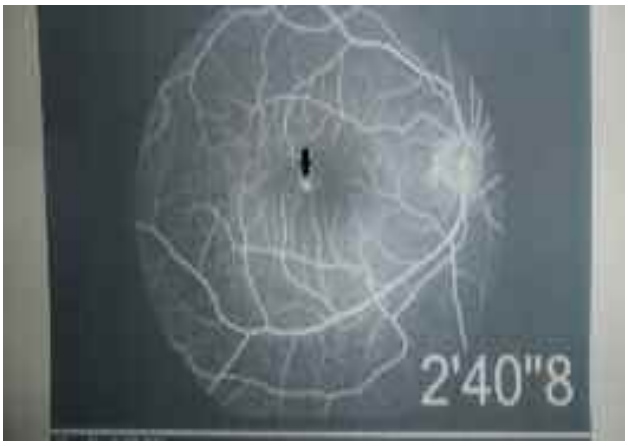

Figure 1: fundus fluorescein angiography showing macular leakage point in the right eye.

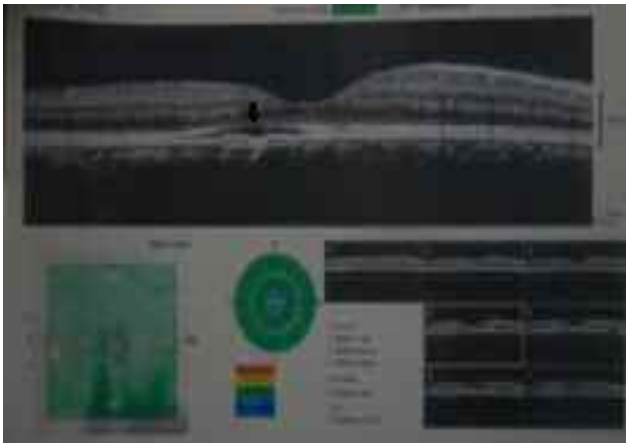

Figure 2 : OCT of the right eye showing serous retro foveal retinal detachment

OBSERVATION N°2:

A 43 year-old man, a helicopter pilot with no particular medical history, consulted for sudden decrease in visual acuity in the right eye with metamorphopsia especially during night mission, with onset a week prior his presentation. Questioning revealed a nasal corticosteroid treatment one week before and a high level of environmental stress. The visual acuity was 8/10 in the right eye and 10/10 in the left eye. The examination of the anterior segment was normal in both eyes. Color vision was normal. The glare test and test of stereopsis were disturbed. The fundus examination showed a right macular bleb. A point of extra foveal macular leak was objectified by fundus fluorescein angiography (Figure 3). OCT confirmed the diagnosis of CSC (Figure 4).

The pilot was declared unfit temporary. The evolution was marked by spontaneous remission without treatment after four months and by the occurrence of two recurrences of

CSC a year apart. First recurrence lasted nine months and the second lasted seven months. After all, the pilot recovered normal visual function.

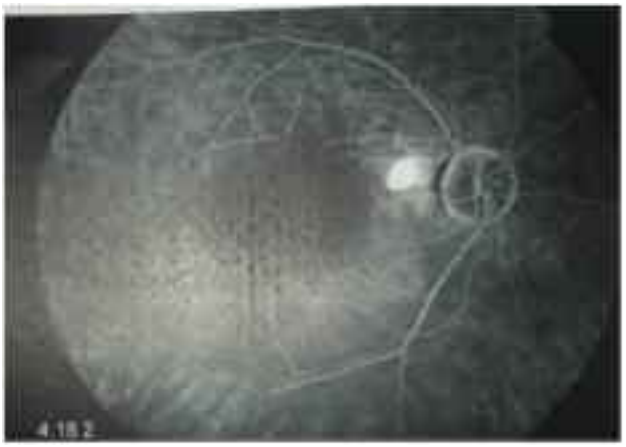

Figure 3 :fundus fluorescein angiography showing point of extra foveal macular leak

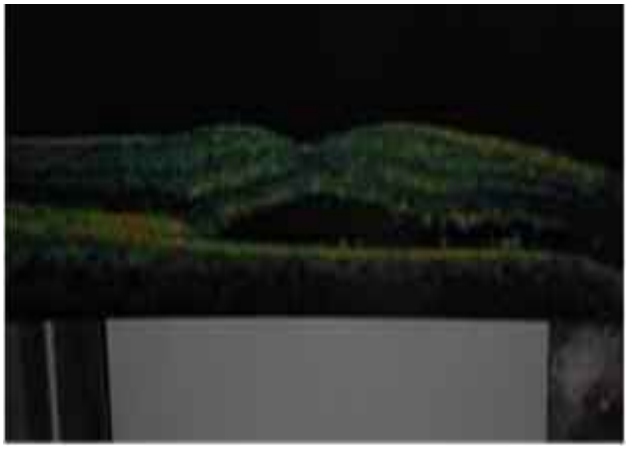

Figure 4 : OCT showing retrofoveolar serous retinal detachment

Conclusion

The CSC is an idiopathic maculopathy. Symptoms include sudden blurred vision, functional macular syndrome. The disease usually regresses spontaneously within three to four months, however with a risk of recurrence. The most common initial approach to treatment is observation [1]. Recently, spironolactone, aldosterone antagonist is used in the treatment of the CSC [2].

The use of Glucocorticoids in any form (oral, intravenous, subcutaneous, epidural and intra-articular) was involved in the development or worsening of the CSC [3-6]. The link between the use of intranasal corticosteroids and CSC was also reported by several authors [7-9]. The CSC is a common disease in the flight [10].

The particular operational stress among military pilots especially in anxious nature promotes its development. CSC affects, to varying degrees, various parameters of pilot visual function. The resumption of flights should only be decided after the normalization of these parameters, the reapplication of the neurosensory retina and the disappearance of functional macular syndrome.

Place of nasal corticosteroids in the development of the CSC has some particularities in the flight. In fact, in current practice, aerospace ENT is frequently confronted with acute inflammatory condition type inflammatory rhinitis associated with tubal dyspermeability, causing possible otological barotrauma in the pilot. In these cases, the use of inhaled corticosteroids provides, due to their anti-inflammatory action, fast sinonasal and tubal decongestion by reducing significantly the catarrhal edema. Although the contribution of nasal corticosteroids are efficient in aviation ENT therapy, the risk of eye complications such CSC motivate avoiding them among pilots at risk of developing this disease. It is advisable that pilots, undergoing steroid treatment in any form, be alerted to the risk of sudden visual impairment.

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