INTRODUCTION

Pseudoexfoliation (PEX) syndrome is an age-related elastosis in which abnormal fibrilar extracellular material is produced and deposited in various ocular tissues. PEX is the most common cause of secondary open angle glaucoma. The clinical course of glaucoma in patients with PEX is more severe and has worse prognosis in comparison with glaucoma patients without PEX. Studies have shown that the pseudoexfoliative material is widely distributed throughout the body. Pseudoexfoliative material can be found in blood vessels, skin, lungs, liver and other visceral organs. PEX is associated with coronary artery diseases, hypertension, Alzheimer’s diseases and other cardio-vascular disorders.

PURPOSE: The assessment of retrobulbar and internal carotid artery blood flow parameters in patients with glaucoma and pseudoexfoliation syndrome.

METHODS

Peak-systolic velocity (PSV), pulsatility index (PI), end-diastolic velocity (EDV) and resistivity index (RI) in the short posterior ciliary artery (SPCA), central retinal artery (CRA), ophtalmic artery (OA) and internal carotid artery (ICA) were recorded in every patient by colour Doppler imaging (CDI). (Fig. 1, 2)

MATERIAL

The study includes 121 patients (82 women; 39 men) with the mean age of 68.5 years. The patients were divided into 4 groups:

- Control group (C), (n=52 eyes)
- Patients with Pseudoexfoliation syndrome (PEX), (n=66 eyes)
- Patients with Glaucoma and Pseudoexfoliation syndrome (PEXG), (n=62 eyes)
- Patients with Glaucoma (G), (n=62 eyes)

RESULTS

Patients from PEX, PEXG and G groups demonstrated a pattern characterized by increased PI and RI values as well as decreased PSV and EDV values measured in retrobulbar and internal carotid arteries in comparison with patients from the control group.

In the PEX group difference occurred in PSV values which were substantially decreased in SPCA (0.0663) and in RI values in ICA (p=0.0012) which were increased versus the control.

In PEXG group EDV values in CRA were lower (p=0.0490) in comparison with the control.

G group presented with a non significant decrease in retrobulbar and internal carotid arteries blood flow.

CONCLUSIONS

1. Patients with glaucoma, pseudoexfoliative glaucoma and pseudoexfoliation syndrome presented reduced retrobulbar and internal carotid artery blood flow.

2. Most prominent changes in blood flow were noted in PEX > PEX+Glaucoma > Glaucoma > Control groups respectively.

3. The highest RI values in retrobulbar and internal carotid artery were measured in the PEX group. The authors suggest that PEX may be a potential risk factor of disrupted blood flow in examined arteries and therefore can have influence on blood supply of the head, optic nerve the course of glaucoma.

4. The PEX+glaucoma group presented with more decreased blood flow in retrobulbar (except CRA) and internal carotid artery than the glaucoma group.

REFERENCE