THE EVALUATION OF CENTRAL CORNEAL AND RETINAL THICKNESS AND INTRAOCULAR PRESSURE IN PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

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Introduction

➢ The eye gives critical clues for healthcare providers to diagnose various systemic illnesses. Ocular changes are common in various endocrine disorders, such as diabetes mellitus and Graves' disease. However, there are only few studies reporting ocular changes in patients with primary hyperparathyroidism (PHPT). Here, we examined central corneal thickness (CCT) and retinal thickness (RT), intraocular pressure (IOP) and their relationships with serum intact parathyroid hormone (iPTH), calcium (Ca) and phosphorus (P) levels in PHPT patients.

Methods

➢ Thirty-seven patients with PHPT were included into the study and compared with age- and sex-matched 43 healthy subjects. A detailed ophthalmologic examination, including CCT, RT and IOP, was performed in both groups.

Results

➢ No statistically significant difference was detected in right and left RT between two groups (p=0.730 and p=0.530, respectively). Right CCT and IOP were significantly higher than controls (p=0.024 and p=0.038, respectively). However, no significant difference was found between groups concerning left CCT and IOP (p=0.415 and p=0.070, respectively) (Table 1).

➢ A negative correlation was observed between right CCT, and serum P (Fig. 1) and 24-h urine P levels (r=-0.391, p=0.017 and r=-0.393, p=0.021, respectively). Additionally, right IOP was negatively correlated with 24-h urine Ca levels (r=-0.331, p=0.049). Left CCT was negatively correlated with 24-h urine P levels (r=-0.348, p=0.044). Furthermore, a negative correlation was found between left IOP and 24-h urine Ca levels (r=-0.396, p=0.017). While iPTH levels were positively correlated with right RT (r=0.408, p=0.012) (Fig. 2), no significant correlation was found between iPTH levels, and right CCT, right IOP, left CCT, left RT and left IOP levels (p>0.05 for all parameters). Also, no significant correlation was present between serum Ca levels, and right CCT, right RT, right IOP, left CCT, left RT and left IOP levels (p>0.05 for all parameters).

Table 1. Ocular parameters of both groups

	Patients (n=37)	Controls (n=43)	p
Right RT (µm)	267.29±19.64	265.53±25.02	0.730
Right CCT (µm)	553.72±36.11	535.72±33.65	**0.024**
Right IOP (mmHg)	15.40±3.05	14.17±2.17	**0.038**
Left RT (µm)	271.29±40.28	266.67±24.37	0.530
Left CCT (µm)	541.70±33.76	535.72±31.50	0.415
Left IOP (mmHg)	15.34±3.14	14.22± 2.29	0.070

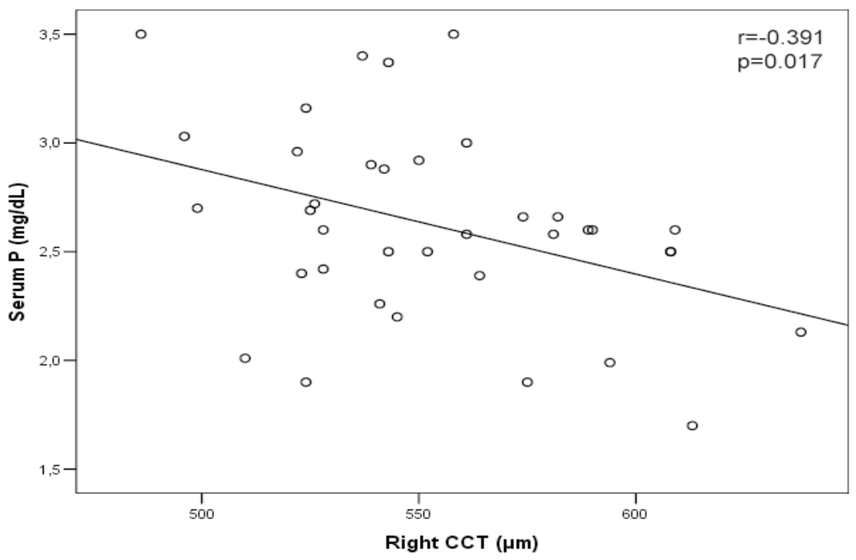

Fig. 1 The correlation between serum P level and right CCT

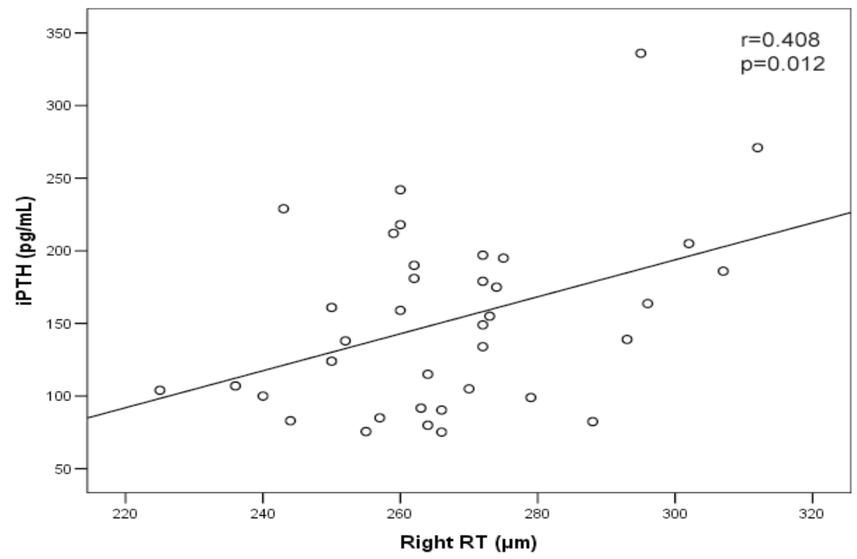

Fig. 2 The correlation between iPTH level and right RT

Conclusion

➢ Studies related to ocular diseases and PHPT are rare in literature. We observed that right CCT and IOP in patients with PHPT were significantly higher than controls. We consider that the identification of ocular aspects of PHPT is significant, and further studies related to the condition are required.