

# Evaluation Of Epicardial Fat Tissue Thickness And Carotid Intima Media Thickness In Patients With Primary Hyperparathyroidism After Parathyroidectomy

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## Objectives:

Primary hyperparathyroidism (pHPT) is a disease that presents with hypercalcemia developing as a result of an increase in parathormone (PTH) and 80% of cases are asymptomatic (1). The relationship of pHPT to cardiovascular disease has been known for a long time. It has been shown that epicardial fat tissue (EFT) thickness in pHPT is increased and that this is closely associated with cardiovascular disease and atherosclerosis (2,3,4). However, EFT thickness in patients with hyperparathyroidism who were treated with parathyroidectomy has not yet been studied. In this study we aimed to examine whether carotid intima-media thickness (CIMT) and EFT thickness would be affected after treatment of hPTH by parathyroidectomy.

## Methods:

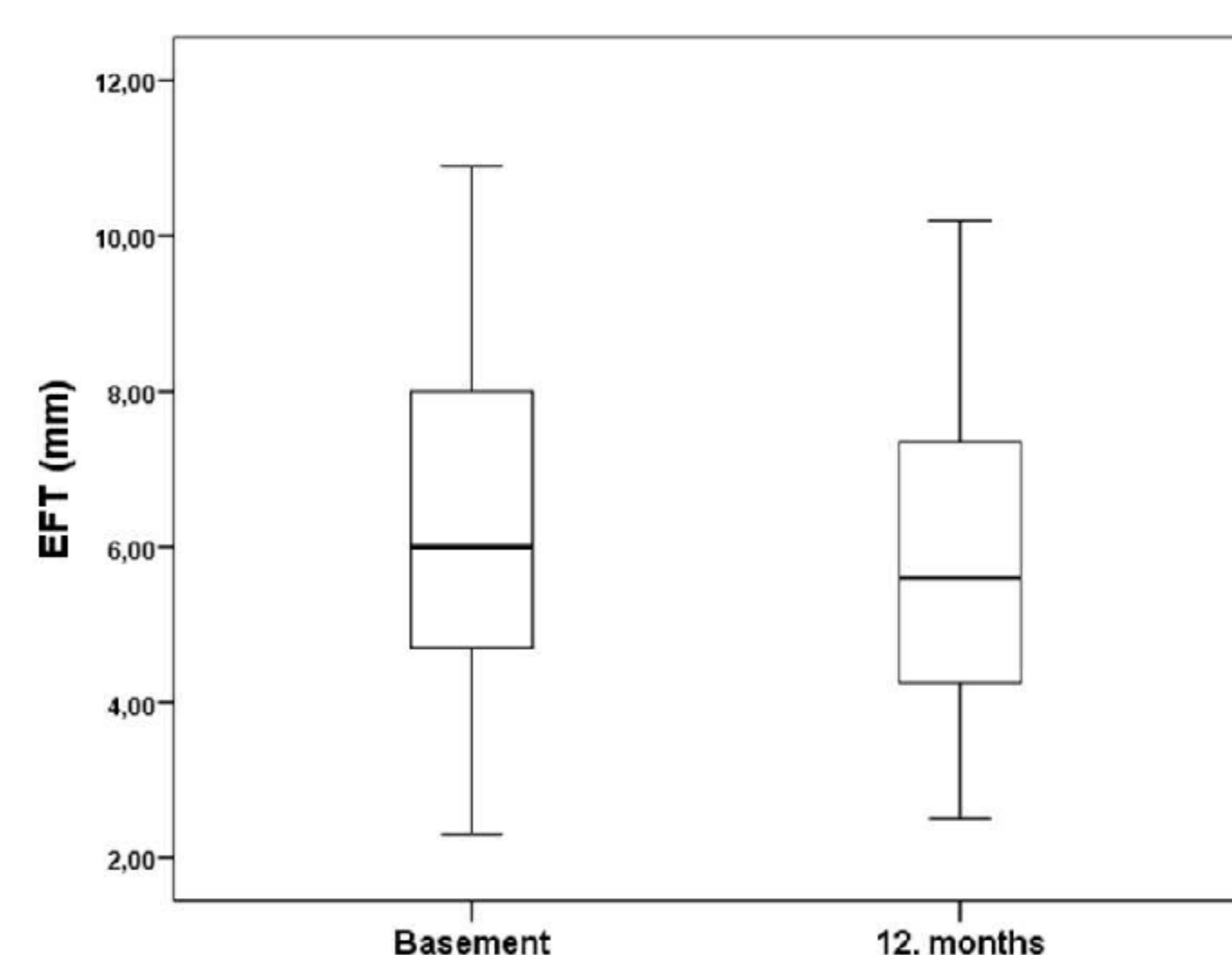
27 patients with pHPT who were diagnosed with a parathyroidectomy indication and 39 healthy volunteers were included in the study. For all patients with pHPT, anthropometric measurements were made before and 12 months after parathyroidectomy, and EFT thickness, CIMT, serum PTH, calcium and lipid levels were measured. Changes occurring in these patients after 12 months compared to before parathyroidectomy are given in Table 1.

Table 1. Clinical and laboratory characteristics of the patients with pHPT, pre and post-treatment

Variables	Pre-treatment	Post-treatment 1. year	P- value
PTH (pg/mL)	230 (83.5-2576)	40.4 (15.3-55)	< 0.001*
Ca (mg/dL)	11.63 ± 1.0	10.3 ± 0.58	< 0.001**
FPG (mg/dL)	95.67 ± 14.25	101.36 ± 12.36	n.s.**
TC (mg/dL)	182.14 ± 47.55	189.97 ± 38.94	n.s.**
LDL (mg/dL)	117.35 ± 37.24	136.88 ± 39.32	< 0.01**
HDL (mg/dL)	47.91 ± 15.1	52.39 ± 21.15	n.s.**
TG (mg/dL)	138.96 ± 56.42	141.42 ± 57.55	n.s.**
CIMT (mm)	0.78 ± 0.13	0.75 ± 0.16	n.s.**
EFT (mm)	6 (2.3-10.9)	5.6 (2.5-10.2)	n.s.*

n.s.: Not significant, C: Control subjects, pHPT: Primary hyperparathyroidism, PTH: Parathormone, Ca: Calcium, FPG: Fasting plasma glucose, TC: Total cholesterol, LDL: Low-density lipoprotein cholesterol, HDL: High-density lipoprotein cholesterol, TG: Triglyceride, EFT: Epicardial fat tissue, CIMT: Carotid intima-media thickness.

\*Mann-Whitney U test, \*\* Student t-test.



## Results:

It was observed that preoperative CIMT and EFT thickness in patients with pHPT were significantly higher than the control group (Table 1, Figure 1) (for both  $p < 0.001$ ). Although hyperparathyroidism and hypercalcemia of the patients improved after parathyroidectomy, no significant change in the thickness of CIMT or EFT was determined.

## Conclusions:

CIMT and EFT thickness seem to be good cardiovascular indicators for diagnosis of patients with pHPT. Nevertheless, this study raises the question of the reliability of a decrease in these parameters in patient follow-up. It is therefore necessary to be more careful in evaluating these parameters after treatment of patients with pHPT.

## References:

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