Primary Hyperparathyroidism due to Cystic Parathyroid Adenoma which is not detected in 99mTc-Sestamibi scan

1Department of Internal medicine, Seoul National University College of Medicine, Seoul, Republic of Korea, Division of Endocrinology and Metabolism, 2Department of Internal Medicine, Seoul National University College of Medicine, Seoul, Republic of Korea

*Ah Reum Khang1, Eun Ki Kim1, Eun Shil Hong1, Hyung Jin Choi1, Chan Soo Shin1,2, Kyong Soo Park1,2, Seong Yeon Kim1,2

Parathyroid cysts are very rare among the causes of primary hyperparathyroidism (PHPT). They are divided into functional and nonfunctional cysts. Operative removal is a treatment of choice for a functional cyst. 99mTc-Sestamibi parathyroid scan is a highly effective and sensitive diagnostic tool for localization of hyperparathyroidism, however it shows a false-negative result, occasionally. We found one case which was presumed to have cystic parathyroid adenoma based on clinical findings and neck computed tomography (CT) with negative finding in parathyroid scan. A male patient who was 44 years-old visited to hospital due to legs pain and it was occurred 5 months ago and deteriorated gradually. In addition, he presented with the compressive symptoms such as dysphagia and hoarseness. Serum calcium level was 14.4 mg/dl, phosphorus 2.0 mg/dl, creatinine 0.99 mg/dl and intact parathyroid hormone (iPTH) was increased to 478.1 pg/ml. On neck CT, 6.2×3.8×2.7 cm sized cystic nodule was found in inferior part of right thyroid gland. Sestamibi uptake for the found nodule was not detected on 2 hour delayed imaging of 99mTc-Sestamibi parathyroid scan. Fine needle aspiration for diagnosis and localization was done and intracystic iPTH was increased to 61,600 pg/ml. The iPTH monitoring for focused parathyroidectomy led to successful enucleation of right inferior parathyroid. It was a parathyroid adenoma and serum calcium, phosphate and iPTH was normalized after operation. A cystic parathyroid adenoma can be hardly detected on 99mTc-Sestamibi parathyroid scan sometimes. The multidisciplinary approach which considered clinical findings, laboratory results, physical examination and other imageries (CT, Ultrasound, etc) is important for differential diagnosis of hyperparathyroidism. The iPTH monitoring helps the focused parathyroidectomy.