

The Value of Imaging of the Parathyroid Glands in Secondary Hyperparathyroidism

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Abstract

It is estimated that up to 90% of patients with chronic kidney disease develop secondary hyperparathyroidism (sHPT). Although the disease has multiple manifestations, the most important pathological feature, from the point of view of increased mortality, is represented by the ectopic arterial, myocardial and cardiac valvular calcifications. The calcifications are progressive and lead to high blood pressure, left ventricular hypertrophy, atrio-ventricular blocks, angina and myocardial infarction. Therefore the risk of cardio-vascular events is increased. Failure of drug therapy to control disease progression is an indication for parathyroidectomy. In sHPT all parathyroid glands are affected, hence the need to detect 4 glands intraoperatively, by bilateral cervical exploration. However, considering the possibility of ectopic localization of these glands as well as the possibility of some supernumerary glands, it is desirable to have an imagistic map as accurate as possible, thus avoiding the risk of postoperative recurrence. The available imaging investigations are represented by the ultrasound of the cervical region, the parathyroid scintigraphy and those of the second line - CT or MRI examination. If in primary hyperparathyroidism, where there is only one parathyroid adenoma (or two), the preoperative imaging results are satisfactory, in sHPT there are many cases in which the imaging does not reveal all four parathyroid glands.

Key words: parathyroids, secondary hyperparathyroidism, chronic kidney disease, scintigraphy