We present the diagnostic usefulness of Tl-201 chloride scintigraphy for preoperative localization of parathyroid tumors. The abnormality was better recognizable with simultaneous presentation of Tl-201 image and Tc-99m thyroid image, and/or subtraction image by computer. Results: Of 29 tumors in 21 patients with hyperparathyroidism, 24 were positive for parathyroid tumors by the scanning procedure. The minimum weight of parathyroid tumors is 100 mg. We used samples obtained from resected specimens and calculated the uptake by tumor tissue with a scintillation counter and compare it with the uptake by parathyroid tissue, normal thyroid tissue, cervical muscle and blood. The uptake ratio in parathyroid tumor was 2 times as high as that in normal thyroid tissue and 17 times as high as that in cervical muscle, and 50 times as high as that in blood. Conclusion: The value of Tl-201 chloride scintigraphy in Tl-201-Tc-99m subtraction image for parathyroid tumors was reported.