Abstract

Accuracy of single versus combined use of ultrasonography or computed tomography in the localization of parathyroid adenoma.

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OBJECTIVE:
To assess the accuracy of a single versus combined use of ultrasound (US), or computed tomography (CT) in the localization of diseased parathyroid glands.

METHODS:
Forty-one patients with hyperparathyroidism treated surgically between January 2000 to December 2005 at Jordan University Hospital, Amman, Jordan were included in this study. Preoperative ultrasonographic and CT findings were reviewed and compared to the intraoperative and pathologic diagnosis of diseased parathyroid glands.

RESULTS:
The mean age of patients was 46 years (range 16-70; 15 males and 26 females). Parathyroid adenoma was confirmed in 33 patients and hyperplasia of the parathyroid glands in 8 patients. Preoperative evaluation was carried out in 32 patients (CT scan), and in 23 patients (US). In 18 cases, the diagnosis of parathyroid disease was based on CT findings alone and in 9 patients the diagnosis was based on single US findings. Combined CT and US evaluation was carried out in 14 cases and accurate localization was reached in 12 cases yielding 86% sensitivity and 100% positive predictive value. The independent use of these techniques alone resulted in low (39%) sensitivity for US and high (78%) sensitivity values for the CT.

CONCLUSION:
Neck CT scan evaluation has almost an equivalent sensitivity to combined CT and neck US in the preoperative localization of diseased parathyroid glands, however the combined use of these techniques provides the best diagnostic accuracy.