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Título
From Second-Line to First-Line: The Emerging Role of 11C - Choline PET/CT in Parathyroid Surgery

Introdução
Accurate preoperative localization is essential for minimally invasive parathyroidectomy. Cervical ultrasound (US) and 99mTc-sestamibi (MIBI) remain the standard first-line imaging modalities, although their performance is variable. Choline PET/CT, traditionally reserved for discordant or negative US/MIBI studies, has shown high diagnostic accuracy and may be suitable as a first-line option.

Material e Métodos
We performed a retrospective single-center analysis of 47 consecutive patients undergoing parathyroidectomy for primary hyperparathyroidism (January 2024?October 2025). All patients underwent US and MIBI. 11C - Choline PET/CT was obtained when first-line imaging was inadequate. Diagnostic accuracy was correlated with surgical findings and histopathology.

Resultados
Parathyroid pathology was confirmed in all patients. US localized adenomas in 29%, and MIBI in 70%. Due to inadequate standard imaging, 25 patients (53%) underwent 11C - choline PET/CT, which demonstrated 100% positivity and 100% sensitivity on a patient-based analysis. In comparison, sensitivity was 76% for MIBI and 32% for US.

Discussão
11C - Choline PET/CT showed superior sensitivity and reliable localization in all discordant cases, directly facilitating minimally invasive parathyroidectomy. These findings support the potential adoption of choline PET/CT as a first-line imaging modality in the preoperative workup of primary hyperparathyroidism.

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