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Radio-guided Exploration Facilitates Surgical Cytoreduction of Neuroendocrine Tumors

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Introduction: Radio-guided exploration can be an essential tool in the successful cytoreduction of neuroendocrine tumors.

Hypothesis: The choice of the proper radioisotope, dose and time interval between injection and exploration are the major factors responsible for attaining a successful outcome.

Methods: 244 patients undergoing cytoreduction between November 2006 and July 2009 were reviewed to determine optimal dose and interval between injection and exploration and the impact of radio-guided exploration.

Results: 46 patients had gamma probe guided explorations including 3 patients injected with ^{99m}Tc, 3 patients injected with ¹²³I MIBG (3) and ¹¹¹In pentetretotide in 40 patients with midgut carcinoid. In 37 out of 40 (93%) of the ¹¹¹In-pentetretotide guided explorations the gamma probe was deemed helpful in localizing and differentiating tumor from normal tissue. In 5 out of 6 neck and mediastinum explorations the gamma probe was essential for completing a quick, safe and minimally invasive procedures. ¹²³I MIBG was not useful in all three patients included in this review. The optimal doses and interval between injection and exploration of ¹¹¹In pentetretotide is 6 mCi, injected 6-7days prior to surgery.

Conclusion: Radio-guided exploration is a useful adjunct and sometime an essential tool for resecting neuroendocrine tumors with the right isotope injected at the optimal dosage and time.

