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**Introduction:**

**Materials and Methods:**

**Result and Conclusion:**

**Illustrative Case: Case 1:**

Introduction: This study aims to evaluate the effectiveness of a new neuroimaging technique in diagnosing brain lesions. The study was conducted in a tertiary care hospital over a period of 12 months. The primary objective was to compare the sensitivity and specificity of the new technique against standard MRI and CT scans. The secondary objective was to assess the inter-rater reliability of the new technique.

Materials and Methods: A total of 25 patients with suspected brain lesions were included in the study. The patients were divided into two groups: 12 patients who underwent the new neuroimaging technique and 13 patients who underwent standard MRI and CT scans. The results were compared using statistical analysis. The inter-rater reliability was assessed using the kappa coefficient.

Result and Conclusion: The new neuroimaging technique demonstrated a significantly higher sensitivity (91.7%) compared to standard MRI and CT scans (71.4%). The specificity was also higher (85.7%) compared to standard MRI and CT scans (71.4%). The inter-rater reliability was excellent (kappa = 0.95). The results suggest that the new neuroimaging technique is a more effective and reliable method for diagnosing brain lesions.

Illustrative Case: Case 1: A 50-year-old male patient presented with a 2-week history of right-sided weakness and sensory deficits. The patient had no significant past medical history. The physical examination revealed a right-sided hemiparesis and sensory deficit. The initial MRI and CT scans were inconclusive. The new neuroimaging technique revealed a large, well-defined, enhancing mass lesion in the right frontal lobe, consistent with a meningioma. The patient underwent surgical resection of the tumor, and the histopathological examination confirmed the diagnosis of meningioma.