

CHAPTER A3

Cerebral Neoplastic Disease

INTRODUCTION

Magnetic resonance imaging (MRI) is virtually always the imaging study of choice in the detection and localization of intracerebral tumors. The unique capability of imaging in multiple planes provides superior localization and definition of intracranial tumors. Conventional MR sequences coupled with intravenous contrast remains the optimal technique for the detection and characterization of the majority of intracranial neoplasms. The role of newer MR techniques (proton MR spectroscopy, diffusion and perfusion imaging) in the work-up of intracerebral neoplasms is yet to be defined.

This chapter is organized into units based on imaging intracranial tumors by location. *Intra-axial* tumors are lesions found within the brain parenchyma and may be *metastatic* (UNITA3.1) or *primary* (UNITA3.3). *Extra-axial* (or extra-cerebral) tumors may be metastatic to the meninges, calvarium, or skull base (UNITA3.2), or lesions may primarily arise from these structures (UNITA3.4). UNITA3.5 presents the preferred set of MR sequences for imaging the brain following therapy for brain tumors. The preferred protocols for evaluating primary and metastatic brain tumors are discussed with specific modifications where necessary.

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