Lymphomatous meningitis is an increasingly frequent, devastating complication of primary central nervous system (CNS) and systemic non-Hodgkin lymphomas (Chamberlain, 2006). The pathologic hallmark of lymphomatous meningitis is the spread of malignant cells to the cerebrospinal fluid (CSF). Multiple and often subtle symptoms and signs are common, progress rapidly, and result in profound morbidity and mortality (Gleissner & Chamberlain, 2006) (see Table 1). Diagnosis often is challenging, and treatment is primarily palliative (Gleissner & Chamberlain, 2007).

Lymphomatous meningitis symptoms can reflect involvement at any level of the neuroaxis. The neuroaxis consists of the meninges (the three-layered sheath enclosing the organs of the nervous system), brain, spinal cord, and CSF (see Figure 1). CSF is produced by the choroid plexus from arterial blood in the lateral and fourth ventricles of the brain at a rate of 600–700 ml per 24 hours (McComb, 1983). At any given time, the average adult has about 140 ml of circulating CSF, 25 ml of which resides in the ventricles (McComb). CSF cushions the brain and spinal cord and has roles in homeostasis and nervous system metabolism (McComb).

Malignant cells can access the CSF in various ways. Direct extension may occur from a solid tumor in the brain parenchyma or from vertebral, subdural, or epidural metastases (Demopoulos, 2004). Metastases to the choroid plexus may shed malignant cells, or spread may occur by retrograde invasion via peripheral or cranial nerves (Demopoulos).

The frequency of hematologic and solid tumor metastases to the CNS has risen steadily since 1999 (Drapatz & Batchelor, 2007). Possible explanations for the trend include increased success at treating extraneural cancers (resulting in longer survival) and the use of drugs with poor access to the CNS (e.g., large-molecule targeted agents) (Chamberlain, 2006; Demopoulos, 2004). At least 4%-8% of patients with non-Hodgkin lymphoma develop lymphomatous meningitis (Kim & Glantz, 2001), but the true incidence may be higher because of under-recognition.