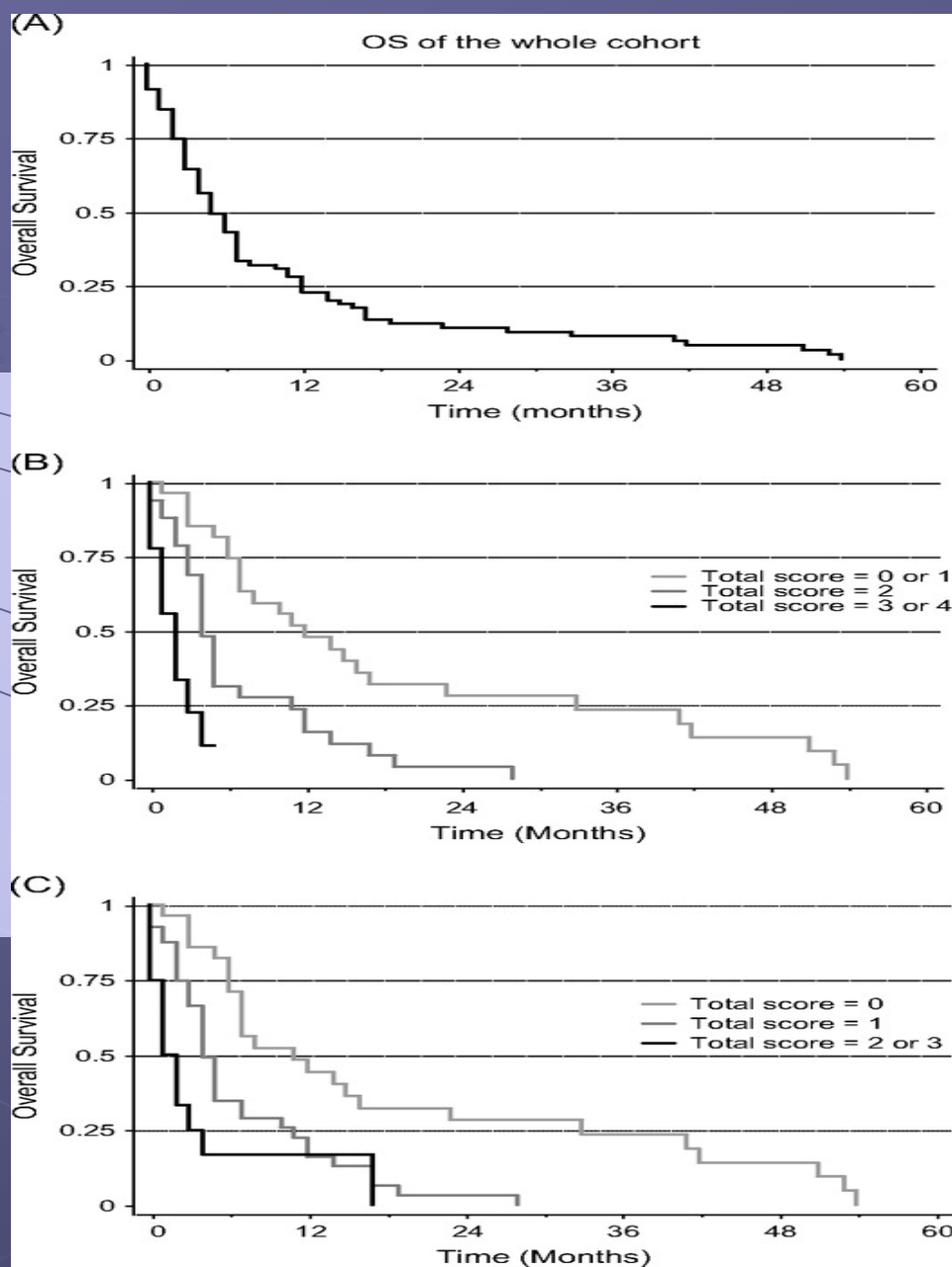


# (A–C) Overall survival (OS) and prognostic scores.



B. ECOG 3-4 = 1  
HR(+) = 0; (-) = 1  
CT > 3 lines = 1  
Cyfra high = 1

C. Eliminated Cyfra  
(not widely done)

Both CH and JJ  
Score = 2 and died  
at ~ 12 weeks.

Gauthier H et al. Ann Oncol  
2010;annonc.mdq232

# Treatment

- Despite 3 decades of effort
- Treatment options remain limited
  1. Need to treat entire neuraxis
  2. Close proximity of tumor to neural structures
  3. Limit RT and CT because of neurotoxicity
  4. Blood-CSF Barrier
  5. Intrinsic resistance of solid tumors
  6. Routine presence of other sites of metastatic disease
- 1/3 opt out; 1/3 too sick; 1/3 treated

# Treatment Overview

## ● Surgery

- Occasional meningeal Bx for Dx
- Placement of intraventricular (Ommaya) reservoir for CSF access
- CSF diversionary procedures (V-P shunt)

## ● Radiation

- Focused
- Whole brain
- Spinal

## ● Chemotherapy

- Intrathecal
- Systemic

# Treatment Complications

- Ommaya reservoir

- 1% hemorrhage; 5% infection

- Impaired CSF flow due to obstruction

- Chemo may cause seizures, arachnoiditis (N/V and MS changes)

- Aseptic meningitis

- Necrotizing leukoencephalopathy

- Most common with IT Mtx following RT
- Progressive dementia, debility and death

- Transverse myelitis

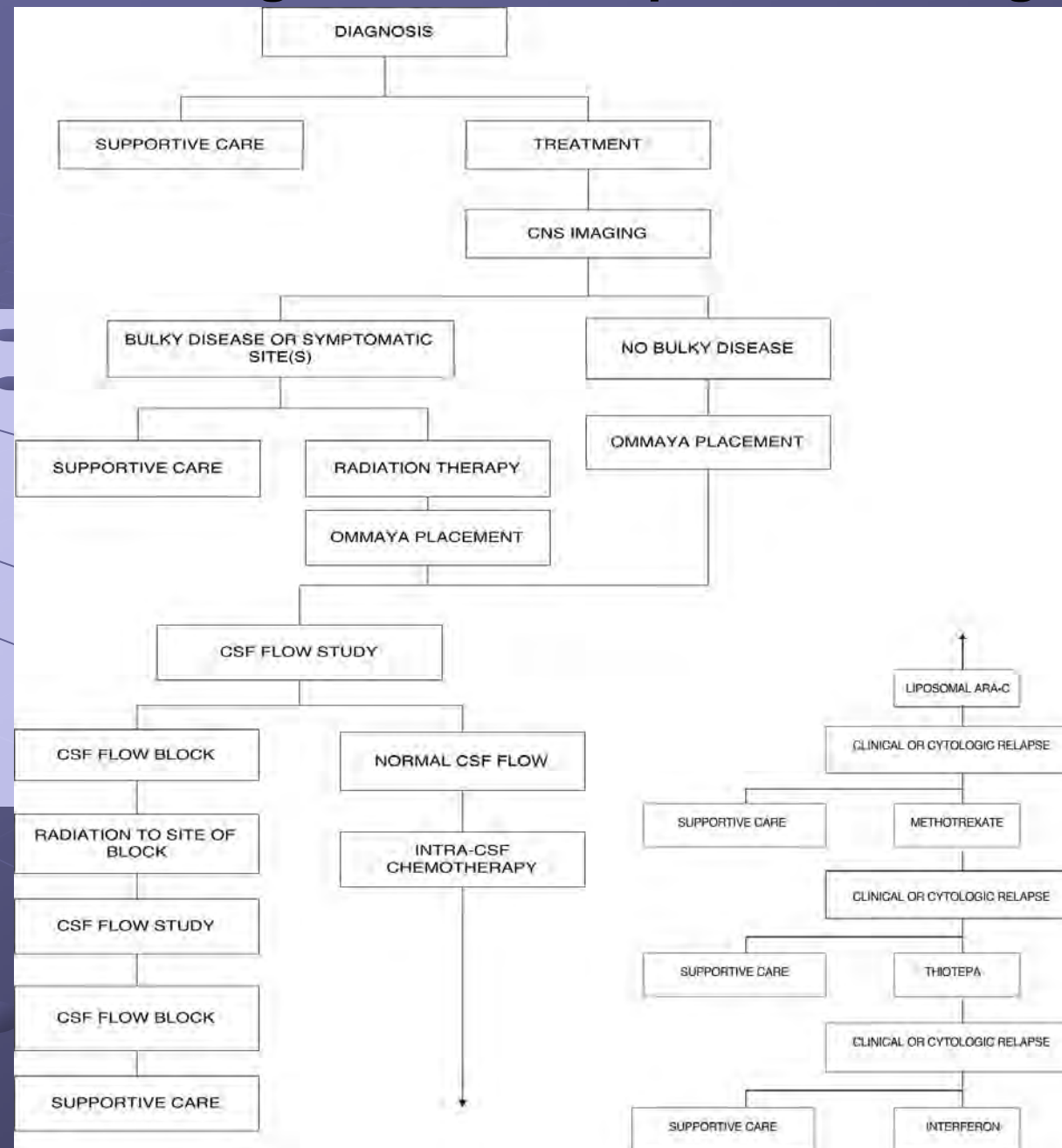
- IT Chemo + RT cord

**Table 56F-6 -- Treatment of Leptomeningeal Metastases**

		Radiation therapy to sites of symptomatic and bulky disease
		Methotrexate (10 mg twice weekly) + leucovorin
		Thiotepa (10 mg twice weekly)
		Cytarabine (50 mg twice weekly)
		Cytarabine (DepoCyt) (50 mg every 2 weeks)
		Systemic chemotherapy (e.g., high-dose methotrexate)
		Optimal treatment of systemic disease

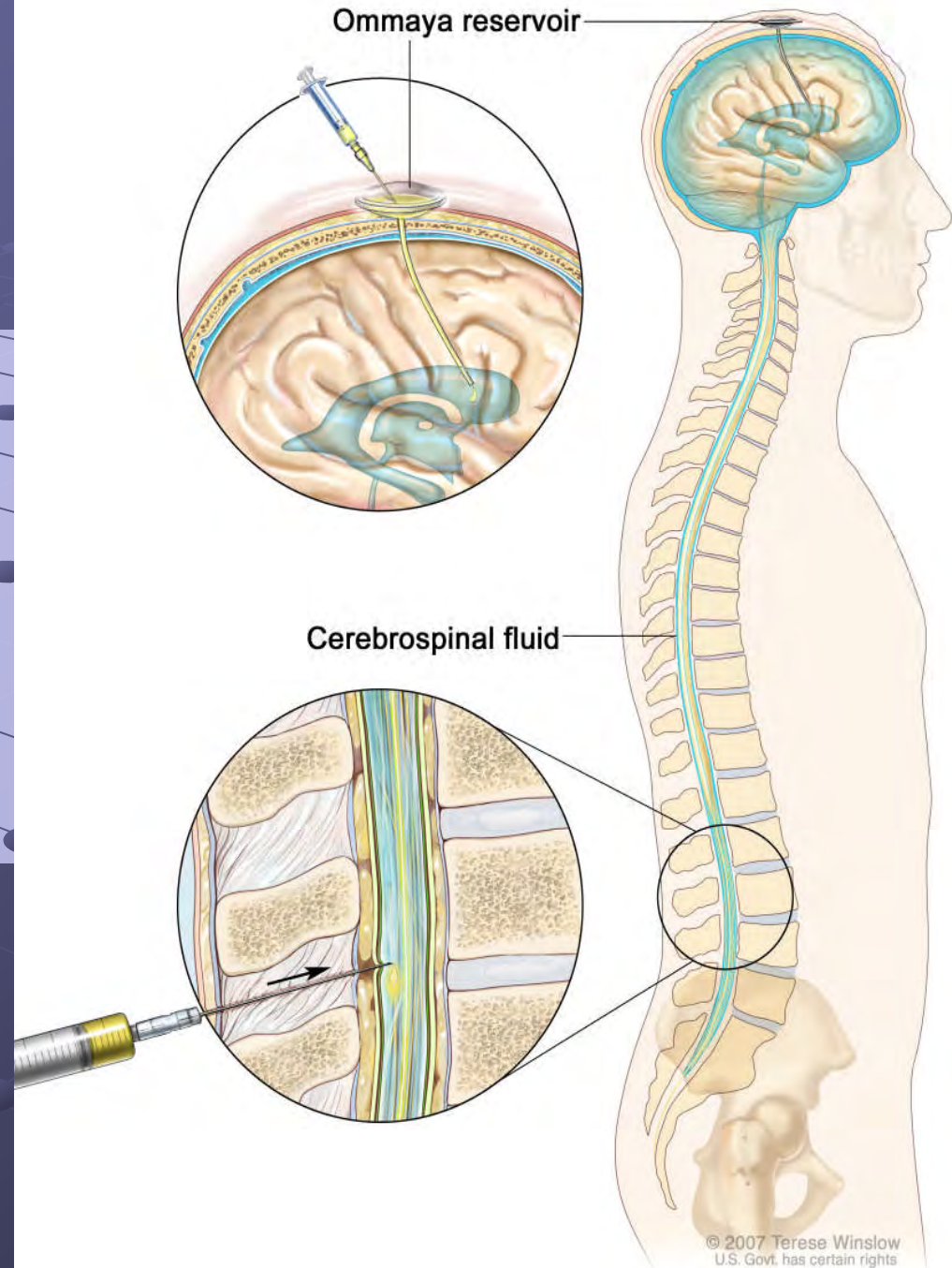
From Bradley: Neurology in Clinical Practice, 5th ed.

# Figure 1. Treatment algorithm of neoplastic meningitis



# Ommaya Reservoir

- Vs. LP
- Repeated access
- Better tolerated
  - But a procedure
- LP admin 10% leak
- Improved drug distribution
- Side port to convert to shunt if necessary



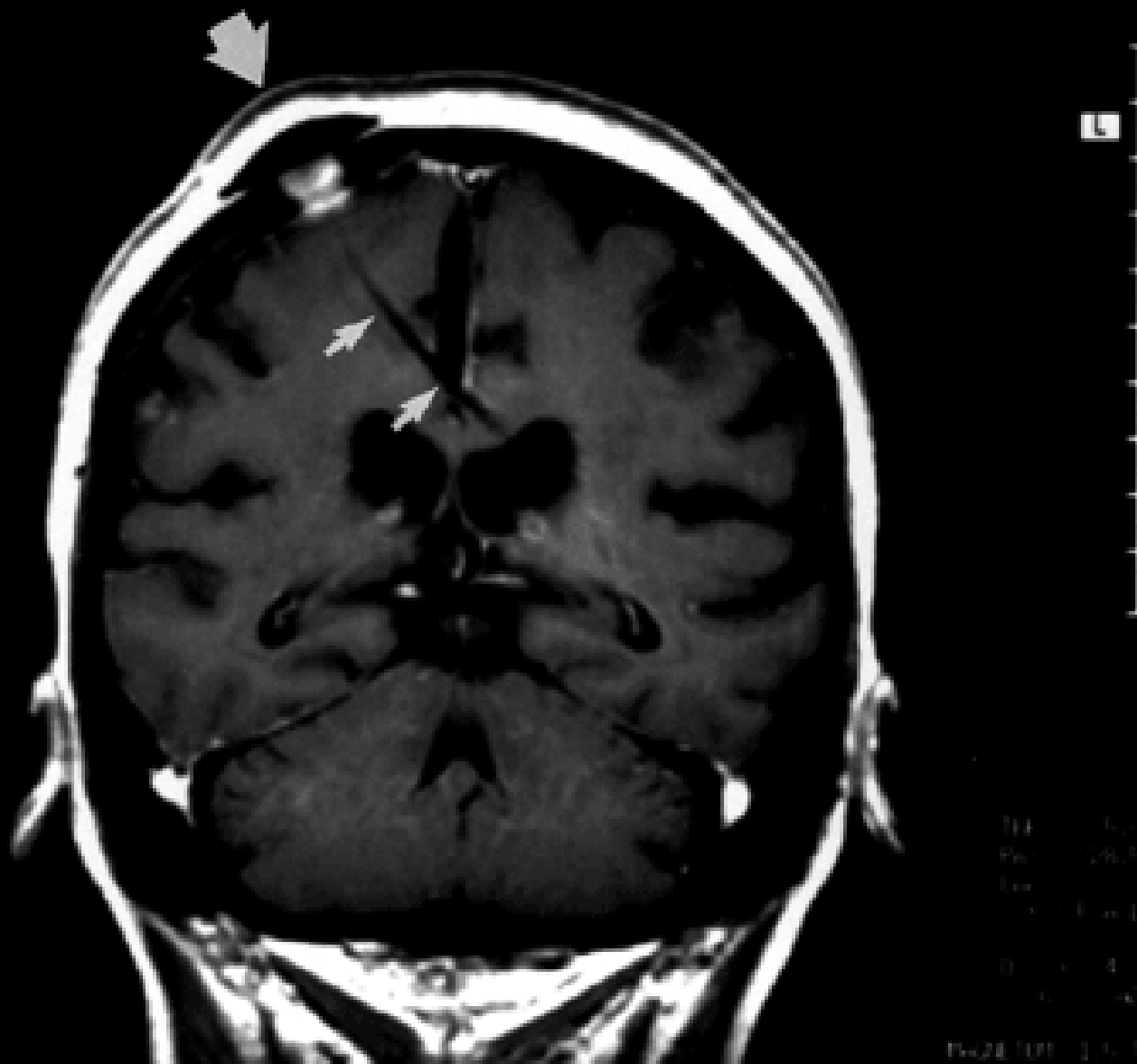
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# Experimental Therapies

- New chemotherapeutic agents
- Intrathecal biologic agents, antibodies, and immunoconjugates
- Radioisotopes and radioimmunoconjugates
- Intensive systemic chemotherapy
  - High-dose Mtx with rescue
- Gene therapy