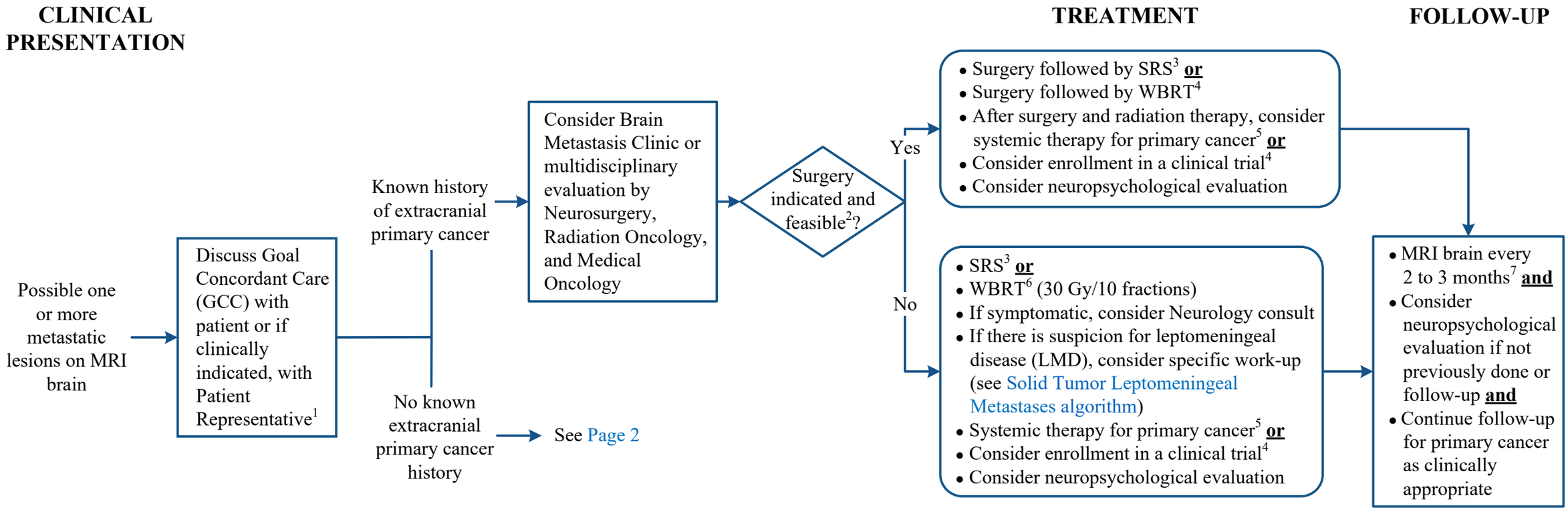
Brain Metastasis Management

Note: Consider Clinical Trials as treatment options for eligible patients



SRS = stereotactic radiosurgery
WBRT = whole brain radiation therapy

[1] GCC should be initiated by the Primary Oncologist. If Primary Oncologist is unavailable, Primary Team/ Attending Physician to initiate GCC discussion and notify Primary Oncologist. Patients, or if clinically indicated, the Patient Representative should be informed of therapeutic and/or palliative options. GCC discussion should be consistent, timely, and re-evaluated as clinically indicated. The Advance Care Planning (ACP) note should be used to document GCC discussion. Refer to GCC home page (for internal use only).

[2] The decision to resect a tumor should be made after multidisciplinary discussion of each case, and it will be dependent on the size, location, feasibility, and necessity (*e.g.*, symptomatic lesion or tissue is required for best clinical decision). For smaller (< 2 cm), deep, or asymptomatic lesions, SRS alone may be more appropriate. Additional treatment of untreated brain metastases after surgery should be considered.

[3] In general, single fraction SRS is preferred for intact lesions < 2 cm in size. Lesions ≥ 2 cm and most cavities may be treated with dose-reduced single fraction SRS or fractionated SRS (9 Gy x 3 fractions is a commonly accepted dose). Targets > 35 mL may be considered for dose reduction to 8 Gy x 3 or 6 Gy x 5. SRS can be performed with multiple technologies including framed or frameless Gamma Knife or Linear Accelerator based approaches. In settings where the highest precision is needed, such as brainstem lesions, framed Gamma Knife offers the most precise form of SRS and is preferred, when available.

[4] Clinical trial is the preferred option if one is available and the patient is eligible

[5] Refer to Cancer Treatment algorithms for melanoma, breast, and lung cancers

[6] Consider hippocampal sparing (if all lesions > 5 mm from the hippocampi) and memantine to prevent cognitive decline associated with WBRT

[7] In selected cases, surveillance may be spaced out as clinically appropriate. Follow-up will be done by the Primary Team and the team who provided treatment for the brain metastases.

Department of Clinical Effectiveness V2
Approved by the Executive Committee of the Medical Staff on 02/18/2025

Brain Metastasis Management

Disclaimer: *This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson's specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient's care. This algorithm should not be used to treat pregnant women.*

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CLINICAL PRESENTATION

No known extracranial primary cancer history

Symptomatic lesion?

Yes

Consult/referral to Neurosurgery for further evaluation

Surgery indicated and feasible[1]?

Yes

- Establish diagnosis with brain tissue acquisition by tumor resection
- Surgery followed by SRS[2] **or**
- Surgery followed by WBRT[3]

No

- Consider systemic work-up as indicated in Box A
- SRS[2] **or**
- WBRT[3] (30 Gy/10 fractions)
- Consider Neurology consult. If there is suspicion for leptomeningeal disease (LMD), consider specific work-up (see Solid Tumor Leptomeningeal Metastases algorithm).
- Systemic therapy for primary cancer[4] **or**
- Consider enrollment in a clinical trial[5]

TREATMENT

Is primary cancer diagnosis confirmed?

Yes

- Refer to disease-specific specialty for further workup and treatment and/or refer to the Brain Metastasis Clinic or multidisciplinary evaluation by Neurosurgery, Radiation Oncology, and Medical Oncology
- For treatment for additional brain metastases, refer to Treatment options on Page 1

FOLLOW-UP

No

No

A

Systemic work-up to establish diagnosis, consider:

- CT chest abdomen/pelvis with and without contrast **or**
- Body FDG-PET
- Other imaging and tests as clinically indicated
- Tissue biopsy (not of brain)

Is primary cancer diagnosis confirmed?

Yes

No

Establish diagnosis with brain tissue acquisition

[1] The decision to resect a tumor should be made after multidisciplinary discussion of each case, and it will be dependent on the size, location, feasibility, and necessity. For smaller (< 2 cm), deep, or asymptomatic lesions, SRS alone may be more appropriate. WBRT after surgery or SRS should be considered in selected cases in which multiple brain metastases remain untreated.

[2] SRS is defined as 1-5 fractions per American Society of Radiation Oncology (ASTRO) guidelines

[3] Consider memantine and hippocampal sparing (if lesions < 5 mm from hippocampi) to prevent cognitive decline associated with WBRT

[4] Refer to Cancer Treatment algorithms for melanoma, breast, and lung cancers

[5] Clinical trial is the preferred option if one is available and the patient is eligible

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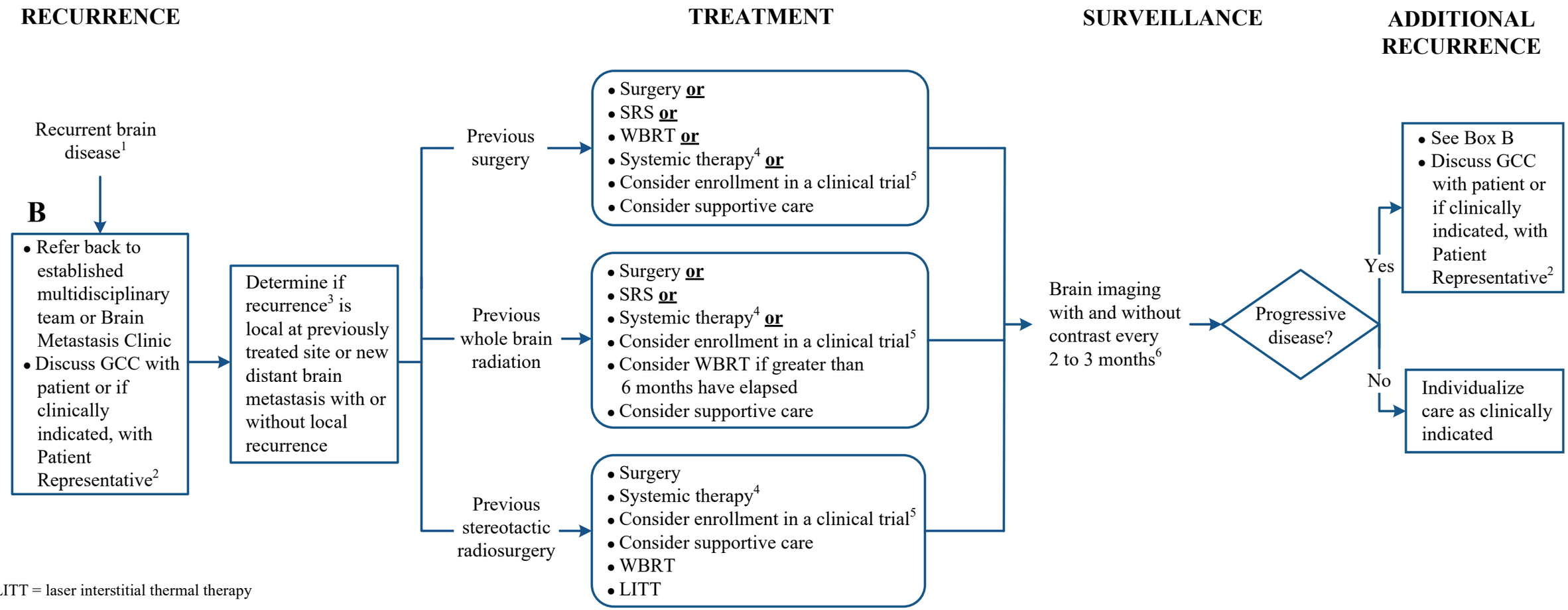
Brain Metastasis Management

Note: Consider Clinical Trials as treatment options for eligible patients



LITT = laser interstitial thermal therapy

[1] Clinician should ensure that imaging changes are more likely secondary to tumor recurrence rather than necrosis due to prior stereotactic radiosurgery (SRS)

[2] GCC should be initiated by the Primary Oncologist. If Primary Oncologist is unavailable, Primary Team/Attending Physician to initiate GCC discussion and notify Primary Oncologist. Patients, or if clinically indicated, the Patient Representative should be informed of therapeutic and/or palliative options. GCC discussion should be consistent, timely, and re-evaluated as clinically indicated. The Advance Care Planning (ACP) note should be used to document GCC discussion. Refer to GCC home page (for internal use only).

[3] Recurrence on imaging can be confounded by treatment effects; strongly consider tumor tissue sampling if there is a possibility of treatment-related necrosis. Consider advanced brain tumor imaging such as dynamic perfusion and spectroscopic MRI or PET of the brain.

[4] Systemic disease to be treated as clinically indicated

[5] Clinical trial is the preferred option if one is available and the patient is eligible

[6] In selected cases, surveillance may be spaced out as clinically appropriate. Follow-up will be done by the primary team and the team who provided treatment for the brain metastases.

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