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The contralateral unilateral interhemispheric approach is a neurosurgical technique used to access and treat lesions or tumors located on one side of the brain through an incision made on the opposite side of the brain's midline. This approach allows neurosurgeons to reach lesions in areas that are not easily accessible through other surgical routes. Here's a breakdown of the key steps involved in this approach:

Patient Positioning: The patient is typically positioned supine on the operating table with the head fixed in a neutral position or slightly turned to one side. The exact positioning may vary depending on the specifics of the lesion and the surgeon's preference.

Incision: A scalp incision is made on the side opposite to the lesion's location, along the midline of the head. This incision is carried out through the scalp and down to the skull bone.

Bone Flap Creation: Using a surgical drill or saw, a bone flap is created on the side of the skull opposite to the lesion. This bone flap is carefully removed to expose the dura mater, the tough membrane covering the brain.

Dural Opening: The dura mater is then opened to expose the brain's surface. This opening is typically made to provide access to the contralateral side of the brain, where the lesion is located.

Brain Exposure: With the dura opened, the brain is gently retracted or displaced to provide visualization and access to the lesion site. Care is taken to avoid damaging healthy brain tissue during this process.

Lesion Resection or Treatment: Once the lesion is adequately exposed, the neurosurgeon can proceed with resecting or treating the lesion using various techniques, such as tumor removal, biopsy, or other interventions tailored to the specific pathology.

Closure: After the lesion has been addressed, the dura mater is closed using sutures or other closure materials. The bone flap is then replaced and secured using plates, screws, or other fixation devices. The scalp incision is closed with sutures or staples.

The contralateral unilateral interhemispheric approach offers a unique angle of access to lesions located on one side of the brain, particularly those situated deep within the brain's structures. While it provides excellent exposure to certain lesions, it also presents risks associated with any brain surgery, such as bleeding, infection, and neurological deficits. The decision to use this approach depends on factors including the lesion's location, size, and relationship to critical brain structures, as well as the surgeon's expertise and patient-specific considerations.