

Transnasal Transclival Approach for Resection of Clival Chordoma

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Objective

This surgical video demonstrates the step-by-step transnasal transclival approach for the resection of a clival chordoma, highlighting key anatomical landmarks, surgical techniques, and strategies for minimizing complications.

Introduction

Clival chordomas are rare, locally aggressive tumors that arise in the skull base, presenting unique challenges for resection due to their proximity to critical neurovascular structures. Endoscopic approaches, particularly the transnasal transclival route, provide a minimally invasive option for resection with enhanced visualization and access.

Methods and Materials

- Surgical Approach:
 - Endoscopic transnasal transclival approach.
 - Identification of key anatomical landmarks: sphenoid sinus, clivus, and dura.
 - Resection technique: Piecemeal tumor removal using angled instruments and neuronavigation.
 - Hemostasis and reconstruction strategies: Vascularized flaps or allografts to close the defect.
- Key Instruments and Technologies:
 - Endoscope (0° and 30° lenses).
 - Neuronavigation system for precise localization.
 - Bipolar coagulation and microdebriders for tissue handling.

Results

- Complete or near-total resection of the clival chordoma.
- Preservation of neurovascular structures.
- No major complications, such as cerebrospinal fluid leaks or cranial nerve deficits.

Discussion and conclusion

The transnasal transclival approach offers a safe and effective method for resecting clival chordomas. Key advantages include direct access to the tumor with minimal brain retraction and improved visualization of the surgical field. The use of neuronavigation and angled instruments is critical for minimizing complications and maximizing tumor resection.

