Case Presentation

Percutaneous Transforaminal Endoscopic Tumorectomy (PTET) for Lumbar Dumbbell-shaped Tumors
History and Physical Exam

- **HPI:**
  - Female, 61 years
  - Presented with progressive and refractory back pain approximately 2 months
  - BMI: 25

- **Exam:**
  - Motor: full strength (5/5) in both lower limbs
  - Reflexes: 2+
  - Sensory: intact bilaterally to pain and light touch
  - Gait: normal
A preoperative MRI was performed.

A. Sagittal plane, B. Coronal plane, C. Transverse plane

An ellipsoidal tumor (indicated by the red arrow), with clear borders, located near the intervertebral foramen of L5/S1, was close to the nerve roots and was an obvious enhancement.
The patient was placed in a prone position on the radiolucent table, with electrophysiological monitoring.
Path planning for operation:
The target (red dot) is located at the intersection of the superior endplate line of the lower vertebra and the inner line (dotted line) of the vertebral pedicle in anteroposterior projection.
The puncture point was located 12 cm lateral to the posterior midline (adjusted according to the patient's body shape), the intervertebral foraminal puncture path pointed to the paravertebral tumor, and the target in the extending direction.
Under X-ray fluoroscopy guidance, when the puncture needle reached the paravertebral tumor tissue, a guidewire was inserted.
A skin incision of approximately 7 mm was made, and a soft tissue dilator and a tubular working sheath were sequentially placed along the guidewire.
Connect the light source and start the operation.
Resected the connective tissue on the working channel to expose the tumor surface.
The paravertebral tumor tissue and the tumor-bearing nerve root were excised to protect the normal nerve root.
The direction of the tubular working sheath was adjusted such that the endoscope could gradually penetrate the intervertebral foramen and enter the spinal canal in the tumor capsule, and the tumor tissue could be removed in pieces.
Normal nerve roots can be seen intact.
Intraoperative electrophysiological monitoring: the corresponding EMG (left extensor common tendon, left adductor brevis, left gastrocnemius muscle) all have explosive continuous EMG stimulation when isolating the tumor.
Relax the nerve stimulation, and then the corresponding explosive EMG will calm down and return to the resting state.
Tumor tissue that has been resected, and postoperative pathology suggests schwannomas.
postoperative MRI

A. Sagittal plane, B. Coronal plane,  C. Transverse plane

MRI was performed 1 week after the operation, and the tumor was completely removed (red arrow).
Thanks for watching!