

NPH database. We selected patients who had both NPH and question of Parkinsonism due to tremor. **Results:** Six patients with both NPH diagnosis and tremor were identified. Three patients were treated for Parkinson's disease and followed by neurology. After shunting, all three improved and attempt was made to wean medications, which led to functional decline. The other three patients improved with shunting and after titration of the shunt had resolution of tremor. **Conclusions:** We provide evidence that NPH can result in tremor, treatable by shunting. We also emphasize that those patients do exist who have both diseases. This likely exists along a continuum. Careful consideration of NPH should be undertaken in those patients with suspected Parkinson's disease and imaging findings reminiscent of NPH.

## SPINE AND PERIPHERAL NERVE SURGERY

### P.125

**Back "pane" secondary to glass coffee table mishap: a very unusual penetrating injury to the thoracic dura without spinal cord injury**

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**Background:** Non-gunshot wound penetrating injury to the spinal canal have been known to have variable injury patterns with respect to trajectory and depth. **Methods:** We present a case of a penetrating glass fragment injury to the T11-12 level with a cerebrospinal fluid leak. **Results:** A T11-12 bilateral laminectomy and duraplasty with motor-evoked potential monitoring was performed to remove the foreign object and associated hematoma. The clinical presentation and surgical management are discussed with respect to other non-gunshot-related penetrating spine injuries in the literature. **Conclusions:** This case demonstrates a very rare injury pattern, as the vast majority of intradural penetrating injuries to the thoracic spine result in complete or incomplete spinal cord injury. This patient was neurologically intact, which is remarkable, given the 7cm glass fragment crossing the thoracic spinal canal transversely from the right to left.

### P.126

**Enhancing patient understanding of spinal conditions through advanced imaging platforms**

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**Background:** In spite of the shift towards "personalized medicine," ambulatory medicine lags behind the cutting edge technology employed in non-medical fields to convey information in unique ways to enhance customer interactions. Furthermore, the complex nature of neurosurgical concepts can be difficult to convey within the confines of a short outpatient visit. These factors, coupled with potentially long wait times, can limit a patient's engagement in the treatment process. We propose that application of advanced video platforms will empower patients to feel that neurosurgical concepts are accessible and understandable and enable the face-to-face time with the physician to begin at a more sophisticated level, ultimately improving patient

engagement. **Methods:** 3D modeling, animation, and video game design were used in conjunction with tablet computers and VR headsets to create a video-driven "choose-your-own-adventure style patient experience" with initial use during waiting times prior to face-to-face interaction with the neurosurgery providers. **Results:** 3D modeling, animation, and virtual reality were successfully implemented in the Northwestern Medicine neurosurgery clinic with positive impact on patient engagement, including preliminary improvements in multiple patient satisfaction/"Likelihood to Recommend" scores. **Conclusions:** Advanced imaging platforms, including 3D modeling, animation, and virtual reality show great promise in improving patient engagement, patient retention, and "Likelihood to Recommend" scores.

### P.127

**Preventing C5 palsy after cervical decompression by nerve root untethering and intraforaminal ligament release**

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**Background:** Postoperative C5 palsy (C5P) is a common complication after cervical decompression, potentially related to nerve root tethering. To our knowledge, this is the first study to investigate this hypothesis by comparing C5/C6 root translation and tension before and after root untethering by cutting cervical intraforaminal ligaments (IFL). **Methods:** Six cadaveric dissections were performed. Nerve roots were exposed and translation and tension measured after the roots and spinal-cord were dorsally displaced 5mm before and after IFL cutting. These were also measured during shoulder depression to simulate intraoperative positioning. Clinical feasibility of IFL release was examined by comparing standard and extended foraminotomies to compare resultant root translation. **Results:** IFL-cutting increased translation at both C5/C6 roots (P=0.001). There was no difference between root levels (P=0.33). IFL-cutting increased translation upon shoulder depression at both C5/C6 roots (P=0.003) with a difference also being found between root levels (P=0.02). An extended cervical foraminotomy was technically feasible which enabled complete IFL release and root untethering, whereas a standard foraminotomy did not. **Conclusions:** IFL-cutting increases root translation, suggesting they are either protective (preventing peripheral nerve strain from being transmitted to the spinal-cord) or harmful (by tethering intraforaminal nerve roots and potentially contributing to postoperative C5P) depending on the clinical context.

### P.128

**Percutaneous cortical screws: a novel approach to posterior spinal stabilization**

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**Background:** Pedicle screw (PS) fixation is considered the gold-standard for spine stabilization. However, minimally invasive surgery (MIS) and cortical screw (CS) fixation have become commonplace. The biomechanical and safety profiles of CS compared to PS have yet to be determined. To our knowledge, this is the first study