Mr. Vravis was at a complete stop with his foot on the brake, unaware of the defendant’s vehicle approaching and therefore did not brace. He felt two impacts. His body was thrown forward, Mr. Vravis believed his head struck the steering wheel (despite wearing his seatbelt), and that he may have momentarily lost consciousness.

EMS responded and he was evaluated at the scene due to complaints of neck pain. Mr. Vravis declined ambulance transportation to the ED. His wife was with him, and he did not wish to cause her any concern.

On May 24, 2019, 3 days after the crash, Mr. Vravis presented to Dr. Jeffry Rocker (family medicine) with complaints of neck and upper back pain with intermittent numbness and tingling. His usual pain medication was not controlling the pain (refer prior history). Dr. Rocker diagnosed cervical, thoracic, lumbar spine sprain, prescribed a Medrol Dosepak, methocarbamol 750 mg and instructed him to follow up as needed.

On June 5, 2019, Mr. Vravis presented to Dr. Hannah Huerta (chiropractic). Dr. Huerta ordered X-rays of the cervical, thoracic, and lumbar spine, MRIs of the cervical, lumbar spine and brain, and initiated treatment modalities.

On June 18, 2019, Mr. Vravis presented to Judith Plummer-Morgan NP with complaints of constant sharp pain in his neck radiating to both trapezii and proximal arms, pounding headache, lower back pain radiating to both legs, and intermittent but severe pain in his thoracic spine. She diagnosed cervical and lumbosacral radiculopathy, cervicalgia, thoracic spine pain, low back pain, migraine and muscle weakness and recommended continuing chiropractic therapy.

On July 11, 2019, Mr. Vravis underwent an MRI of the brain which was negative for acute intracranial pathology/post-traumatic abnormality.

On July 19, 2019, Mr. Vravis underwent MRIs of the cervical and lumbar spine. The cervical spine study revealed: significant malalignment at C3-4 and C7-T1; at C3-4, type 1 Modic endplate change, broad central disk herniation with superior and inferior extrusion (1-2 mm), annular tearing and moderate spinal stenosis, flattening and impingement of the cord; at C4-5, post-operative changes, left lateral recess disk herniation with superior and inferior extrusion (2 mm), impingement on the cord with moderate spinal stenosis, moderate left neural foraminal stenosis with left C5 nerve root compression; at C5-6, left lateral recess extruded disk herniation with migration superiorly and inferiorly (2 mm), annular tearing and impingement on the cord, moderate spinal stenosis; at C6-7, central disk herniation with superior and inferior extrusion (2 mm), impingement on the cord and moderate spinal stenosis; at C7-T1, anterolisthesis of C7 on T1 by 2.5 mm.

The lumbar spine study revealed: malalignments at L5-S1 and L3-4; at T11-12, focal central disk herniation with superior and inferior extrusion by 1-2 mm and annular tearing, moderate spinal stenosis; at L1-2, bulging annulus impinging upon the thecal sac, right neural foraminal stenosis, right L1 nerve root compression; at L2-3, Type 1 Modic endplate change, bulging annulus impinging upon the thecal sac; at L3-4, focal central disk herniation with annular tearing and inferior extrusion (2 mm), moderate spinal stenosis, moderate to severe neural foraminal stenosis, mild to moderate facet arthrosis; at L4-5, broad central disk herniation with annular tearing and inferior extrusion (2 mm), moderate spinal stenosis, moderate neural foraminal stenosis (greater on the left), moderate facet arthrosis, and posterior interspinous ligament edema consistent with sprain; at L5-S1, Type 1 Modic endplate change, central disk herniation with superior and inferior extrusion (2 mm), annular tearing and mild to moderate spinal stenosis, moderate neural foraminal stenosis on the right and severe on the left due to bilateral neural foraminal extruded disk herniations which migrate superiorly (2 mm) bilaterally, and moderate facet arthrosis.

Mr. Vravis underwent chiropractic treatment with Dr. Huerta through July 26, 2019, at which point his symptoms had improved by approximately 25%, and he was referred for orthopedic evaluation.

On October 17, 2019, Mr. Vravis presented to Dr. Eli Prowe (chiropractic). Dr. Prowe initiated treatment modalities for the neck, middle and lower back.

On October 28, 2019, Mr. Vravis presented to Catherine Hurley APRN to Dr. Andrew Messer (orthopedic spine surgery). She recommended cervical and lumbar epidural steroid injections with persistent pain.

On December 12, 2019, Dr. Prowe placed Mr. Vravis at maximum medical improvement.

(Mr. Vravis had a fall in January 2020; he underwent bilateral lower extremity X-rays which were negative for fracture).

On February 4, 2020, Dr. Timothy Bundy (physical medicine and rehabilitation) prepared a Future Care Analysis report for Mr. Vravis regarding ongoing treatment for neck pain, low back pain and intractable headaches with specific recommendations for at least one neurological consultation to evaluate symptoms associated with a possible post-concussion syndrome.

[In April 2020, Mr. Vravis developed pain and swelling to his bilateral lower extremities. Doppler ultrasound confirmed multiple bilateral deep veins thromboses].

On May 21, 2020, Mr. Vravis underwent bilateral C3-4 medial branch block injections with 90% relief; progressing to C3-4 bilateral radiofrequency nerve ablations on July 2, 2020, providing 70% relief.

On August 27, 2020, Dr. Messer performed a lumbar medial branch block injection on the right at L3-4. Due to minimal relief, Dr. Messer recommended proceeding with a right L4-5 laminotomy medial facetectomy and decompression of the L5 nerve root.

On September 10, 2020, Mr. Vravis commenced therapeutic treatment with Dr. Christopher Pell, (chiropractic) and underwent modalities through March 2023.

**On September 30, 2020, Dr. Messer performed a right L4-5 laminotomy, medial facetectomy neural foraminotomy, and decompression of the L5 nerve roots** with improvement of right lower extremity radicular symptoms.

On September 21, 2021, Mr. Vravis updated the cervical and lumbar MRIs, ordered by Dr. Pell. The lumbar spine study revealed: at L1-2, disk bulge, osteophytes and Schmorl’s nodes, mild facet hypertrophy, mild bilateral neuroforaminal stenosis; at L2-3, a right foraminal disk herniation abutting the exiting right L2 nerve, moderate to severe central canal stenosis, disk space narrowing, disk bulge, osteophytes, endplate changes and facet hypertrophy; at L3-4, posterior disk herniation with annular tear, anterior impression on the thecal sac, disk space narrowing, disk bulge, osteophytes, endplate changes and facet hypertrophy, moderate to severe bilateral neuroforaminal stenosis; at L4-5, posterior disk herniation (extending more to the left) with anterior impression on the thecal sac, disk bulge, disk desiccation and osteophytes, with facet and ligamentum flavum hypertrophy, moderate spinal stenosis (0.8 cm), moderate to severe bilateral neuroforaminal stenosis; at L5-S1, posterior disk herniation with anterior impression on the thecal sac, mild spinal stenosis (0/9 cm), disk bulge, disk desiccation, osteophytes, endplate changes and facet hypertrophy, moderate to severe bilateral neuroforaminal stenosis. Compared to the prior study of July 2019, this study demonstrates interval progression of the lumbar spondylosis and redemonstration of the disk herniations at L3-4, 4-5 and L5-S1.

The cervical spine MRI revealed: at C3-4, posterior disk herniation abutting the spinal cord, mild spinal stenosis, disk bulge, disk desiccation, osteophytes, endplate changes and facet hypertrophy, mild to moderate bilateral neuroforaminal stenosis; at C4-5 and 5-6, anterior fusion, osteophytes and facet hypertrophy, mild and mild to moderate bilateral neuroforaminal stenosis, respectively; at C6-7, disk space narrowing, disk bulge, osteophytes and facet hypertrophy, anterior impression on the thecal sac, moderate to severe bilateral neuroforaminal stenosis; at C7-T1, Grade 1 retrolisthesis (0.2 cm), disk bulge, osteophytes and facet hypertrophy, anterior impression on the thecal sac (stable compared to the prior study).

On August 3, 2023, Mr. Vravis underwent MRIs of the right hip, lumbar and cervical spine. The right hip study revealed a joint effusion only.

The lumbar MRI revealed: at L1-2, disk space narrowing, disk bulge, osteophytes and facet hypertrophy, anterior impression on the thecal sac and mild bilateral neural foraminal stenosis; at L2-3, a right foraminal disk herniation abutting the descending right L3 nerve root, moderate to severe right neural foraminal stenosis, disk space narrowing, disk bulge, osteophytes and facet hypertrophy; at L3-4, a posterior herniation with anterior impression on the thecal sac, disk space narrowing, disk bulge, osteophytes and facet hypertrophy, moderate to severe bilateral neural foraminal stenosis, moderate spinal canal stenosis (0.8 cm); at L4-5, a posterior herniation with anterior impression on the thecal sac, disk space narrowing, disk bulge, osteophytes and facet hypertrophy, moderate to severe bilateral neural foraminal stenosis, moderate spinal canal stenosis (0.8 cm); at L5-S1, posterior disk herniation with anterior impression on the thecal sac, disk bulge, osteophytes and facet hypertrophy, moderate to severe bilateral neural foraminal stenosis, mild spinal canal stenosis (0.9 cm). Findings stable with prior study of September 21, 2021, redemonstrating disk herniations.

The cervical MRI revealed: at C3-4, Grade 1 retrolisthesis (0.3 cm), disk space narrowing, disk bulge, osteophytes and facet hypertrophy, anterior indentation of the spinal cord, mild canal stenosis (0.9 cm), moderate bilateral neural foraminal stenosis; at C4-5, 5-6, anterior fusion with severe bilateral neural foraminal stenosis; at C6-7, posterior disk herniation with increased signal abutting the spinal cord, mild spinal canal stenosis, disk space narrowing, disk bulge, osteophytes and facet hypertrophy, severe right and mild left neural foraminal stenosis.

On August 7, 2023, Mr. Vravis presented to Dr. Ryan DenHaese (neurosurgery) with complaints of recurrent right leg symptoms and pain in his posterior left leg to the calf, unsteady gait, occipital headaches, and neck pain. Examination revealed bilateral weak hand grip (4/5), limited range of motion in the cervical spine, pain on palpation over the right hip and severe pain with internal and external rotation. Dr. DenHaese reviewed the August 2023 MRIs and recommended proceeding with an anterior cervical discectomy and fusion (ACDF) at C3-4 (treating the C6-7 level conservatively); and a left L4-5 microdiscectomy.

On August 15, 2023, Mr. Vravis presented to Dr. Dylan Saulsberry (neurochiropractic) with complaints of headaches, dizziness (occurring a few times a day and causing him to fall on occasions), mood changes and brain fog. Mr. Vravis stated all symptoms commenced after the subject crash. Neurological evaluation demonstrated post-concussional syndrome and he was recommended to undergo vestibular rehabilitation.

**On September 14, 2023, Dr. DenHaese performed a left L4-5 medial facetectomy with decompression of the L5 nerve and evaluation of the L4-5 disk; and a C3-4 anterior cervical discectomy and anterior arthrodesis.**

On September 15, 2023, the day after surgery, Mr. Vravis presented to AdventHealth ED following a fall with loss of consciousness after striking his head. He complained of headache and neck pain. CT scan of the head was negative for acute intracranial abnormality. EKG demonstrated a possible lateral myocardial infarction (likely old). He was diagnosed with head/scalp contusion and released home.

On January 24, 2024, Mr. Vravis underwent evaluation for vestibular physical therapy at CORA. Height: 5 ft 10 inches, weight: 180 lbs.

*Pre-crash medical history*

Mr. Vravis underwent a cervical spine fusion (non-trauma related) in 2005, performed by Dr. David Rosen (neurosurgery).

In March 2015, Mr. Vravis presented to Michael Zarilla PA with right hip joint pain and complaints of memory impairment over the last several months, associated with fatigue, right leg limp and weakness causing difficulty climbing stairs. He was diagnosed with mild cognitive impairment, chronic pain syndrome, right hip arthralgia. Mr. Vravis had subsequent visits to his primary care physician (Dr. Jeffry Rocker, family medicine) and received cortisone injections for chronic bilateral trochanteric bursitis (worse on the right) approximately 3 monthly, pre-, and post-crash (between 2015 and January 2024). Dr. Rocker also provided Mr. Vravis with prescriptions for Gabapentin 300 mg and Oxycodone 10/325 mg.

On October 14, 2015, he was involved in a hit and run traffic crash. Post-trauma symptoms included dizziness, decreased concentration, mild headache, fatigue. He underwent a, CT scan of the head/brain obtained on October 15, 2015, was negative for acute intracranial hemorrhage/pathology. Mr. Vravis was diagnosed with concussion.

In March 2016 Mr. Vravis was re-referred to Dr. Rosen by Dr. Rocker for evaluation of recurrent neck pain and with additional complaints of mild upper extremity weakness and paresthesias).

In October 2016, Mr. Vravis presented to dr. Rocker with left sided low back pain. He was noted to be at risk of falls.

In May 2017, Mr. Vravis had a vasovagal episode resulting in a left hip contusion.

In December 2017, Mr. Vravis underwent electromyography/nerve conduction velocity studies of the bilateral upper extremities which revealed: moderate to severe bilateral carpal tunnel syndrome, neurapraxic, axonotmetic and chronic, bilaterally (right greater than left); borderline chronic inactive bilateral C6 and 7 radiculopathies

On February 27, 2019, Dr. Rocker, diagnosed age-associated memory impairment (mild).

*Prior Imaging/MRIs*

November 16, 2010, MRI lumbar spine revealed: at L5-S1, approximately 4 mm degenerative anterior spondylolisthesis of L5 on S1 with evidence of mild bilateral facet joint arthropathy, annular redundancy mildly indenting the ventral spinal canal with moderate bilateral foraminal stenosis with impingement of the L5 nerve root ganglia bilaterally; at L4-5, posterior annular bulging mildly indenting the ventral thecal sac with mild right and moderate left foraminal stenosis with impingement of the left L4 neve root ganglion, moderate bilateral facet joint arthropathy; at L3-4, approximately 3 mm degenerative retrolisthesis of L3 on 4 with moderate bilateral facet arthropathy, annular redundancy mildly indents the ventral thecal sac with moderate bilateral foraminal stenosis with impingement of the left L3 nerve root ganglion; abnormal signal within the distal conus.

CT Head, September 18, 2013, revealed: normal study for chronological age without acute intracranial abnormality.

CT lumbar spine ,October 15, 2015 revealed: degenerative changes involving the lower thoracic spine and lumbar spine, most severe at L3-4 where there is associated moderate narrowing of the thecal sac and effacement of the L4 nerve roots, multilevel neural foraminal narrowing, moderate neural foraminal narrowing at L5-S1 with concern for vertical compression of the exiting L5 nerve roots likely with compression of the exiting left T11 nerve root; bilateral L5 pars defect with associated grade 1 anterolisthesis of L5 on S1, mild leftward convex scoliosis.

Cervical spine MRI, obtained April 2016 due to recurrent neck pain, revealed: at C3-4, (superior adjacent segment), disk height loss, degenerative endplate reaction and broad posterior disk osteophyte abutting the spinal cord without substantial impingement, uncinate spurring results in mild to moderate foraminal narrowing (greater on the left); at C6-7, disk height loss with broad disk osteophyte, mild spinal canal stenosis, moderate to severe neural foraminal stenosis (greater on the right); at C7-T1, right facet joint arthropathy and moderate right foraminal narrowing.

Cervical spine radiographs, November 3, 2017, revealed: an ACDF and solid bone fusion at C4-5, accompanying intramedullary signal abnormality suggestive of sequelae of previous compressive myelopathy/myelomalacia; at C3-4, disk herniation with foraminal narrowing (left greater than right) and possible neural impingement; at C6-7, disk herniation with mild to moderate right worse than left neural foraminal narrowing with possible neural impingement, and small annular bulge at C7-T1.

*Medical and other records reviewed for history*

Thomas Vravis, deposition July 28, 2021

Chiropractic Centers of Ocala, Dr. Pell

Interventional Associates of Leesburg, Dr. Messer

Interventional Associates of Orlando, Dr. DenHaese

Stand Up MRI

Integrative Physical Medicine of Orlando, Dr. Huerta

Alfaya Woods Family Medical Center, Dr. Rocker

VinCon Diagnostic Center, CT brain 2015

Centers for Imaging, MRIs

CORA Physical Therapy

Florida Radiology Centers

Orlando Center for Outpatient Surgery, Dr. DenHaese operative report

SimonMed Imaging (prior)

Rayus Radiology

Jewett Orthopedic Clinic (prior)

Surgical Specialists of Ocala (DVT related)

AdventHealth Timber Ridge ED

Future Care Analysis report, Dr. Bundy

Note: there is no loss of consciousness documented throughout the medical records in relation to the subject crash.