

Ashley: Congenital Scoliosis, Wedge Vertebra & Hemivertebra

Patient: Ashley

Condition: Severe Congenital Scoliosis, Wedge Vertebrae & Hemivertebra

Age Range Covered by Case Study: 6 years to 7 years

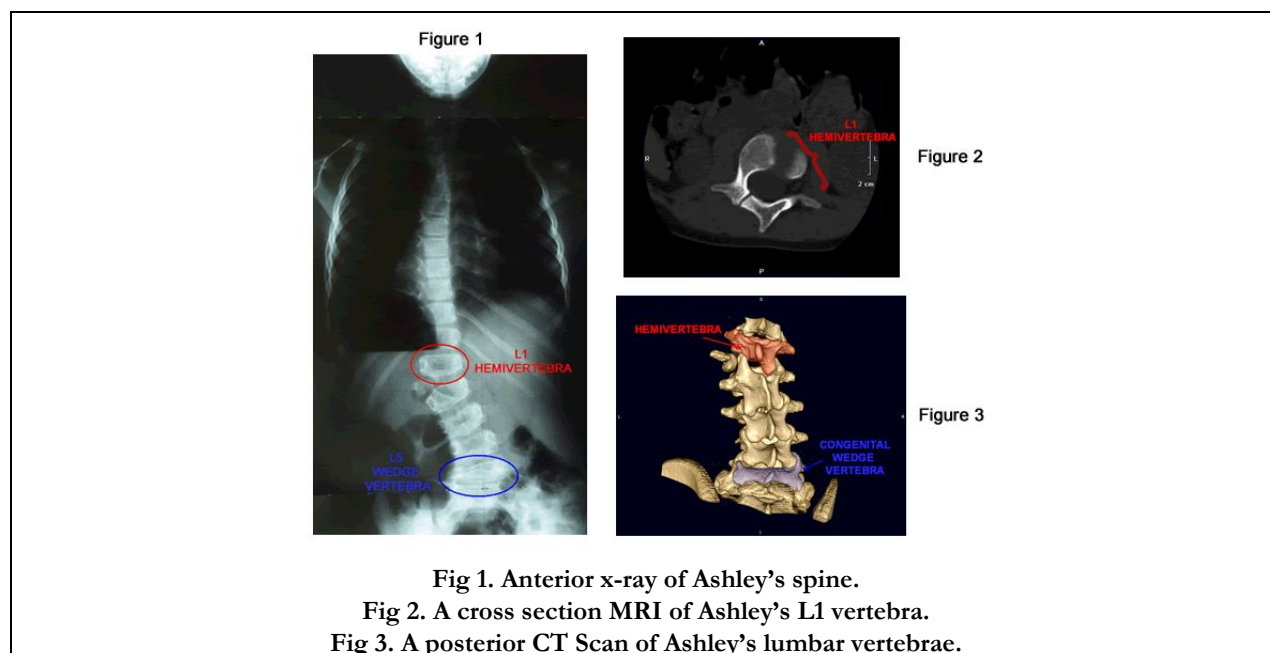
ABSTRACT

A few days before her sixth birthday, Ashley visited my office for a second opinion on her spine. Ashley's mother first noticed a curve in her spine a year before and her pediatrician referred them to orthopedic doctors for further evaluation. MRIs and x-rays showed a 30 degree curve in her spine (scoliosis) along with a vertebra that was undeveloped on one side (hemivertebra). There was no family history of either scoliosis or kyphosis. Given the combination of spinal issues, her doctors reached a consensus that surgical intervention was needed.

DIAGNOSIS

During my examination of Ashley, I confirmed the previous findings and diagnosed:

- Hemivertebra at Lumbar 1 vertebra (L1)
- Decompensation (curving) of the trunk towards one side due to hemivertebra
- Congenital wedge vertebra (deformed vertebra) at Lumbar 5 vertebra (L5)



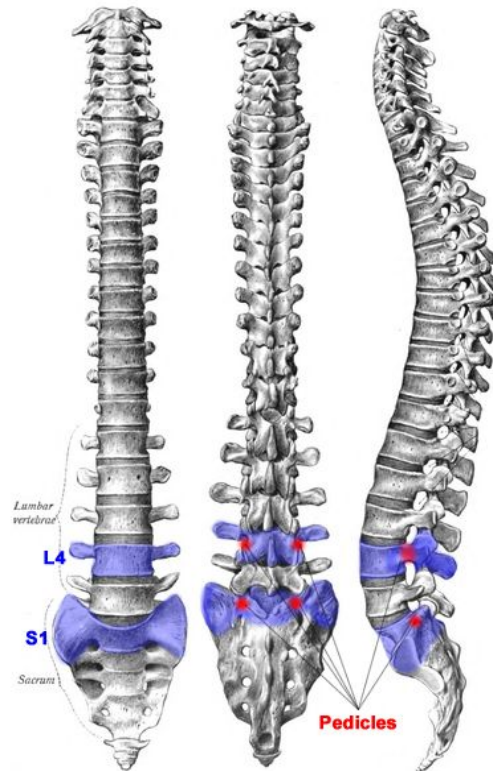
TREATMENT

While non-surgical bracing is an option in some cases of scoliosis, it is ineffective in cases such as this where a hemivertebra is causing a progressive deformity. Surgery was performed to straighten the spine, realign the trunk, and prevent further progression of scoliosis.

- **Posterior Spinal Fusion**

An incision was made from the base of Ashley's L4 to S1 vertebra with care to only disrupt the L4-L5 and L5-S1 facet joints (stabilizing joints between vertebrae). A titanium XIA 4.5

implant was affixed to the L4 and S1 pedicles with screws to fuse the two levels together preventing further progression of Ashley's curve.



Position of a normal spine's vertebrae and pedicles.

- **Osteotomy**

A wedge of bone was removed from the right side of her L5 vertebra to correct the deformity.

To aid healing and prevent infection, closure of the wound was completed by Dr. Michael Margiotta of Plastic Surgery. Screws were not affixed to the L5 because the L4 to S1 fusion provided sufficient fixation. The L1 hemivertebra was stabilized by the lower spinal fusion and was to be observed rather than surgically altered.

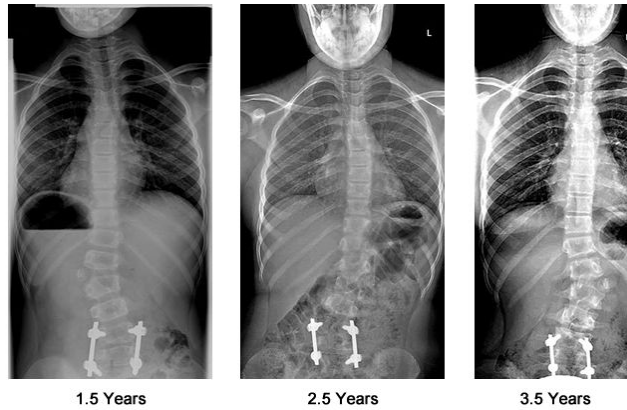
POST OP

- To prevent infection, a course of antibiotics began during the operation and continued for two weeks after surgery.
- Due to the wedge resection of her vertebra, Ashley used a wheelchair for 6 weeks and a brace for 6 months to protect her body while she healed.

RESULTS

After surgery Ashley came into the office every six months and then once per year for follow-ups. The temporary brace and permanent internal hardware stabilized her hemivertebra, halting the

progression of her scoliosis, and keeping her curve in the range of 20 to 25 degrees even as she grew.



Ashley's spine 1.5 to 3.5 years after surgery.

CONCLUSION

Ashley is now a champion freestyle swimmer with no physical limitations.