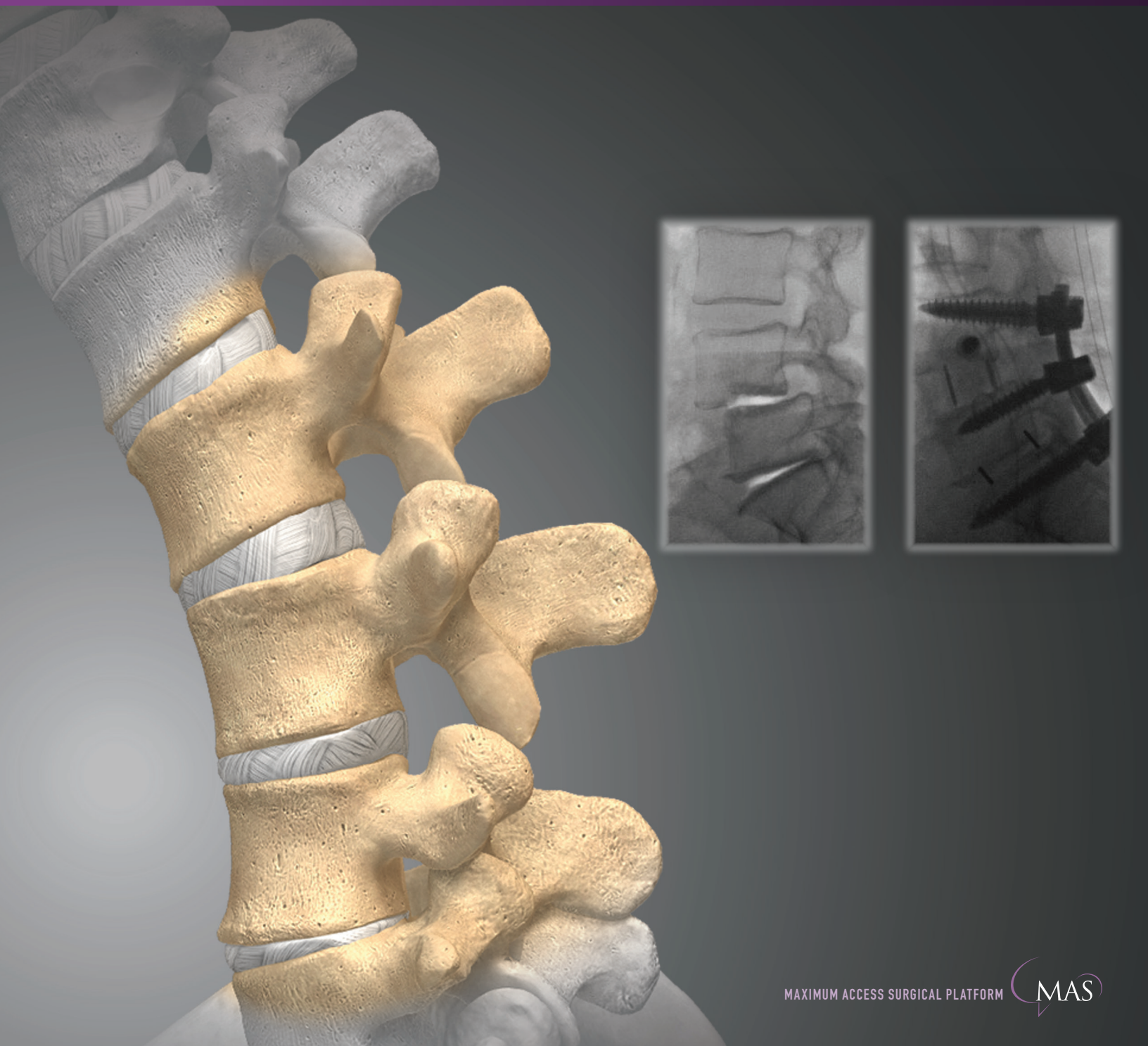
NUVASIVE
Speed of Innovation

XLIF
ACR

XLIF Anterior Column Realignment (ACR)



MAXIMUM ACCESS SURGICAL PLATFORM MAS

SAGITTAL PLANE DEFORMITY

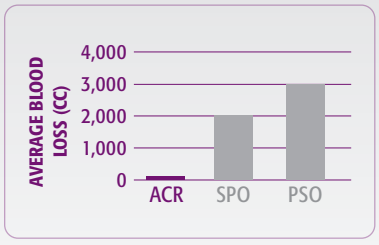
Sagittal plane deformity is an increasingly recognized cause of pain and disability in adult patients, and several studies show that adequate restoration of sagittal plane alignment, in addition to spinopelvic balance, is essential for desirable outcomes in adult deformity. Traditional methods used to correct fixed sagittal deformities include posterior-based osteotomies, such as Smith-Petersen osteotomies (SPO) and three-column resections, such as pedicle subtraction osteotomies (PSO) and vertebral column resections (VCR). However, these techniques are associated with significant morbidity, including prolonged operative times, neurological complications, and a high volume of blood loss.[1]

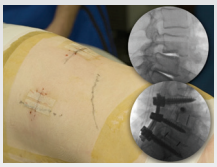
VALUE OF XLIF ANTERIOR COLUMN REALIGNMENT

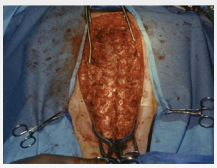
XLIF was created to be a safe, reproducible, minimally disruptive procedure that utilizes conventional surgical techniques with a seamlessly integrated MAS platform. XLIF ACR allows surgeons to access the anterior column of the thoracic and lumbar spine from the lateral position to divide the anterior longitudinal ligament (ALL) and provide anterior column fusion utilizing CoRoent XL-Hyperlordotic implants in adult patients with deformities secondary to advanced degenerative disc disease. This technique provides an alternative method to traditional open procedures and allows surgeons to address sagittal imbalance from the anterior column, while adhering to the standard deformity principles.

Reduced Patient Morbidity

XLIF ACR potentially decreases or eliminates the need to perform extensive posterior osteotomies, potentially resulting in less blood loss, shorter O.R. time, and reduced hospital stay, as well as fewer perioperative complications when compared with traditional fusion surgeries. Average blood loss from SPO/PSO ranges from 2,000 to 3,000cc; comparatively, blood loss from the ACR procedure averages 111cc.[1]

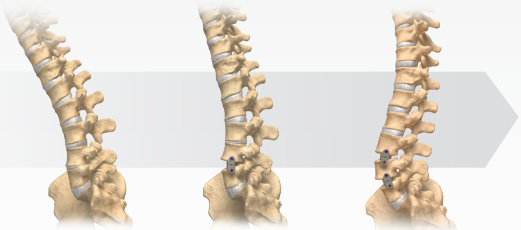






Anterior Column Correction and Restoration of Sagittal Alignment

Focal correction of sagittal plane deformity is achieved through careful division of the ALL, anterior column lengthening, and fusion with the placement of a large CoRoent XL-H (Hyperlordotic) interbody implant, resulting in the restoration of lordosis and improved sagittal alignment.



ALL division and placement of CoRoent XL-Hyperlordotic implants

Stability

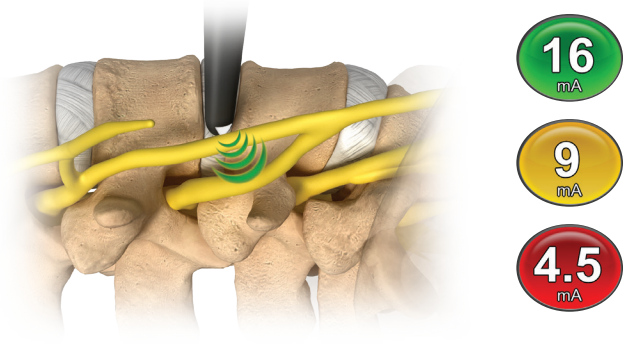
- Hyperlordotic options of 20° and 30° are designed to restore lumbar lordosis to aid in sagittal balance.
- Implants are offered in 22mm width to provide maximized footprint coverage.
- Integrated tab design provides increased stability and anti-migration once the ALL is divided.
- Implants are designed to span the ring apophysis for maximum stability.

[1] Akbarnia BA, et al.: Anterior Column Realignment (ACR) for Focal Kyphotic Spinal Deformity Using a Lateral Transpsoas Interbody Approach and ALL Release. Journal of Spinal Disorders & Techniques. Accepted for publication.

XLIF PROCEDURAL SOLUTION – ANTERIOR COLUMN REALIGNMENT

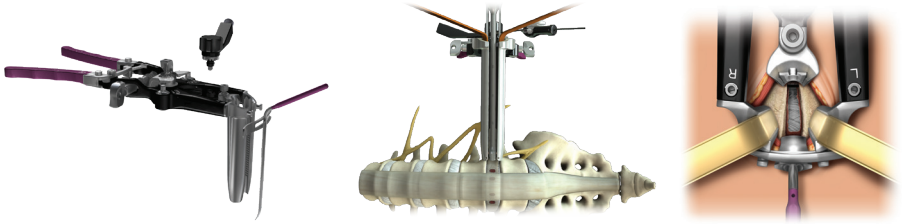
Reproducible Neuromonitoring

- NVM5 is the only clinically validated neuromonitoring system created for safe and reproducible guidance during the lateral approach to the spine.
- A proprietary hunting algorithm with discrete threshold feedback provides the fastest response to determine direction and relative proximity of the nerves.
- Result – most efficient nerve avoidance solution, delivering less trauma to the psoas muscle.
- Critical to enable a safer trajectory to traverse the psoas in patients with less predictable neuroanatomy, due to axial rotation, as well as sagittal and coronal imbalance.



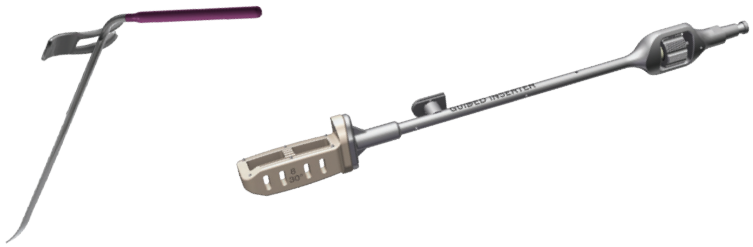
MaXcess 4 Access System

Created for safe and reproducible customizable access with integrated neuromonitoring, as well as the addition of necessary instrumentation to directly visualize and divide the ALL to aid in the placement of large hyperlordotic implants.



CoRoent XL-H (Hyperlordotic) Implant System

- Anterior retractors protect vessels to safely visualize and release the ALL.
- Hyperlordotic footprint designed to restore sagittal alignment.
- Tabbed implant enables seamless interbody placement and screw delivery for increased stability and prevention of anterior migration after ALL release.
- Guided CoRoent XL-H Inserter features a Guided Rail that aligns with the MaXcess Posterior Blade to prevent anterior migration of trials and implants during impaction.



Osteocel Plus

Advanced allograft cellular bone matrix for a complete fusion solution with osteogenic, osteoinductive, and osteoconductive properties.

Broad Range of Posterior Fixation Options

Armada

Sophisticated premier posterior fixation system – from degenerative to complex deformities.

Precept

Premier MAS system that addresses simple to the most complex pathologies, offering advanced designs in guide technologies, rod insertion, reduction capabilities, and compression/distraction.

Reference the applicable MaXcess, CoRoent, Armada, Osteocel Plus, and Precept Technique Guide(s) or Reference Manual(s) and/or Instructions for Use for additional important labeling information.

XLIF ACR CASE STUDY – DEGENERATIVE DISC DISEASE WITH RESULTING DEFORMITY

DEGENERATIVE SCOLIOSIS WITH SAGITTAL IMBALANCE

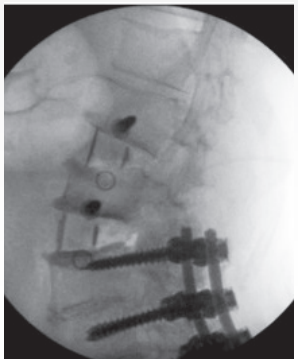
Age: 77
Gender: Male
ACR EBL: 25cc
Osteotomies: None
Procedure: T10-Sacrum (XLIF ACR, L1-L3)

XLIF ACR resulted in restoration of sagittal balance, correction of alignment, indirect decompression, and restoration of disc height, while minimizing extent of posterior osteotomies and associated morbidity.

Pre-Op Measurements:	**Post-Op Measurements:**
LL = 31°	*LL = 77°*
SS = 52°	*SS = 51°*
PI = 77°	*PI = 76°*
PT = 25°	*PT = 25°*
SVA = +20cm	*SVA = +5.8cm*

Pre-Op Sagittal X-Ray

Pre-Op AP X-Ray



Intra-Op Sagittal X-Ray

Post-Op Sagittal X-Ray

Post-Op AP X-Ray

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