The Translation Plate

A Novel Approach to the Treatment of Isthmic Spondylolisthesis and Degenerative Disc Disease

Cliff Tribus MD
Paradigm paralysis, a term originating in the manufacturing business, is the failure to learn new and superior approaches because they differ radically from the generally employed methods in which one has invested time and energy.

It is the terminal disease of misplaced certainty.
Traditional Surgical Approaches

- Posterior fusion +/- decompression
- Same with TLIF/PLIF
- ASF/PSF
Is Decompression Necessary?

**Yes**
- Many do “just because it’s there”
- Instrumentation will make up for the instability
- Source of Bone Graft

**NO**
- Carragee, E
- The addition of decomp. to fusion does not improve results in low grade spondy’s
- NASS award paper ‘97
- Prospective, randomized
Enhanced By Anterior Distraction?

- After ASF of a planned ASF/PSF procedure, foraminal stenosis appears decreased
Why Anterior Approach to Spondy?

- Save posterior exposure
- Reestablish anterior column
- Many surgeons now well versed and comfortable with anterior approaches
- Cage technology limitations are clarifying
- ? Decreased Junctional Disease
Stand Alone ALIF for Spondylolisthesis is a Validated Approach

- Aunoble, Stephane MD*; Hoste, David MD*; Donkersloot, Peter MD†; Liquois, Frederic MD‡; Basso, Yann*; Le Huec, Jean-Charles MD, PhD* Video-assisted ALIF With Cage and Anterior Plate Fixation for L5-S1 Spondylolisthesis Journal of Spinal Disorders and Techniques Volume 19(7), October 2006, pp 471-476.

Planning the incision and the anterior approach

- Plan incision inferior – Must be parallel to endplate of S-1 or below
- Retroperitoneal approach
- Mobilize and protect local vasculature
- Complete discectomy with resection of posterior osteophytes
- Placement of first interbody distractor
The initial distraction is a critical step. If the spondylolisthesis reduces with the passive distraction, the surgeon may then proceed with placement of T-1 (The phase I Translation Plate).

If the spondylolisthesis does not reduce with the passive distraction, the surgeon should proceed with placement of T-2 (The phase II Translation Plate).
Surgical Technique

Anatomic Reduction

Persistent Spondylolisthesis
• The T-1 Plate
Preop Film showing Grade I Spondylolisthesis

Distraction provides passive reduction of the Spondylolisthesis. The T-1 plate may be used.
The T-1 Plate can then be placed, stabilizing the reduced spondylolisthesis.
The initial distraction is a critical step. If the spondylolisthesis reduces with the passive distraction, the surgeon may then proceed with placement of T-1 (The phase I Translation Plate).

If the spondylolisthesis does not reduce with the passive distraction, the surgeon should proceed with placement of T-2 (The phase II Translation Plate).
Surgical Technique

Anatomic Reduction

Persistent Spondylolisthesis

T-1

T-2
• The T-2 Plate
Surgical Technique
The Alignment Mill guide is placed centrally in the disc space. It must lie flush on the S-1 endplate.
The mill guide handle and shaft are removed and the end cutting burr is passed across the anterior aspect of S-1, machining the front of S-1 to receive the S-1 plate.
The S-1 plate is placed in the mill guide and transfixed to the sacrum with bicorticle fixation through the ala.
The alignment pin is threaded into the S-1 plate. The Spondy plate is then placed into the disc space with the alignment pin passing through the corresponding reduction slot on the Spondy plate.
Surgical Technique
The L5 bone screws are placed stabilizing the spondy plate to L5. Alignment pin should be left in (Not Shown). The spondylolisthesis persists in an unreduced state.
The Reduction Instrument goes through the Spondy plate reduction slot into the S-1 plate and pulls the S-1 plate and S-1 vertebral body to the Spondy plate…Thus reducing the Spondylolisthesis.
The Handle of the Reduction Tool is removed and the first Set Screw placed. Then the Reduction Tool is removed, followed by placement of the second Set Screw. The Spondy Plate and the S-1 plate are thus locked together with the Spondylolisthesis in the reduced position.
The Interference Screws are placed followed by the Locking Plate.
Surgical Technique
The Spondy Plate prevents back-out of the Sacral Screws through the S-1 plate while the Lock-out Plate prevents backout of the rest of the screws.
Surgical Technique
Surgical Technique
Surgical Technique
Top 5 Reasons For Selling Now
5. Reached most of my major goals: Idea conception to Implantation- Got to do all of the “fun stuff”.

4. The feeling of extreme responsibility with these patients

3. Conflict of Interest Issues- ties with #3

2. Infrastructure: Quality control, billing, inventory. Compliance requirements which are very time consuming. Reinvent the wheel.

1. Value Added vs Time
Features and Components of the T-Plate

- **Face plate**
- **Interbody Arms**
  - The interbody arms have grooves on the top and bottom. These grooves receive the interference screws and convert the smooth interbody arms to a threaded device.
- **Screws L-5 Bone x 2**
- **Interference Screws x4**
- **Locking Plate**
- **S-1 Screws x 2**
Features and Components of T-1

L5 Bone Screw x 2 –
The L-5 bone screws provide unicorticle purchase into the body of L5.

Interference Screw x 4 –
The interference screws are the final screws placed. They convert the interbody arms of the spondy plate to a threaded device, thus resisting the shear forces across the disc space.

S1 screws –
The S1 screws are meant to be placed with bicorticle purchase across the sacral ala lateral to the facet joint of L5-S1. The bicorticle purchase provides maximal resistance against the primary mode of failure...the shear forces of L5 sliding forward on S1.

Locking Plate –
The locking plate prevents back out of the 8 screws.
Features and Components of T-2

Surgical Technique

**Interference Screw x 4** – The interference screws are the final screws placed. They convert the interbody arms of the spondy plate to a threaded device, thus resisting the shear forces across the disc space.

**L5 Bone Screw x 2** – The L-5 bone screws provide unicorticle purchase into the body of L5.

**S1 screws** – The S1 screws are meant to be placed with bicorticle purchase across the sacral ala lateral to the facet joint of L5-S1. The bicorticle purchase provides maximal resistance against the primary mode of failure...the shear forces of L5 sliding forward on S1.

**Set Screws x 2** – The set screws secure the Spondy plate to the S-1 plate after the reduction instrument has reduced the spondylolisthesis.

**S-1 Plate** – The S-1 plate is affixed to the sacral promontary after preparation with the mill guide and end cutting burr.

**T-2 Spondy Plate**

**Locking Plate** – The locking plate prevents back out of the 8 screws.

**ESM Technologies, LLC.**