GECO 2010
LES-ARCS
FRANCE
LP-ESP II Elastic Spine PAD2
FH-ORTHOPEDICS
First results with 100 implanted LP-ESP after one year

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Disc height reconstruction
Painless motion
Facet joints protection
Avoiding the adjacent disc degeneration
lateral bending
vertical translation
lateral translation
AP translation
flexion extension
axial rotation

6 DOF TDP: 3 rotations and 3 translations
lateral bending
vertical translation
lateral translation
AP translation
flexion extension
axial rotation

6 DOF TDP: 3 rotations and 3 translations
Mechanically reactive cushioning
Compressible core
Silicon + Expandable
Polycarbonate urethane (PCU) pad

Titanium plates

10 years R & D
2. Composition of the viscoelastic cushion:

The « composite » cushion tech.

The potential ROM of the disc prosthesis can be adjusted.

Homogeneous mechanical behavior / the available sizes.

- Ti end plates
- Compressible central part
- Mechanically active PCU pad

Blocked in case of shearing.

Central nucleus
op. duration 82 mn
hosp. stay 6 days
not a joint but a « rubber joint »

Degrees of Freedom [ DOF ]:
6

shock-absorber effect

posterior facets protection +++

Less importance of the soft tissue balance

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The LP-ESP II is a one piece deformable implant made of silicon gel with micro voids and surrounded by polycarbonate polyurethane securely fixed to titanium endplates. 6 degrees of freedom including shock absorption and elastic return.
This prosthesis has been implanted in our Hospital through an anterior Retro-/Transperitoneal approach in segments L3/4, L4/5 and L5/S1.
Medical data and Oswestry disability questionnaire also Oswestry Low Back pain scale and visual analog pain scale were prospectively analyzed.
After achieving of pre-op data were a follow up in 3, 6 and 12 months. The study includes a final follow-up in 24 months.
A total of 100 patients who had undergone a lumbar Totaldisc replacement in Segments L3/4, L4/5 and L5/S1.

Also patients with a Bisegmental TDR.
There were 58 Male and 42 Female patients with a mean age of 45 years. 52% had a previous surgery with a Microdiscectomy.
The indications covered a disc herniation, recurrent herniation, lost of disc height and Osteochondrosis. Instability was a contraindication.
Evaluation by the VAS-score, the pain relief during the follow-up was statistically significant.

At the time of the investigation sciatica had totally disappeared, low back pain had also recovered completely or markedly diminished.
There was no significant difference in the occurrence of the pain between male or female patients but between those with or without a previous surgery. The employment of the patient did not affect the outcome.
Disc height was fully restored after implantation.
The disc height of the adjacent upper level did not change during the follow-up.
No intraoperative complication occurred.
There was no device related complication.
4 patients had to go for a recessotomy because of a subsidence and foraminal thickening.(All had a previous Microdiscectomy)
Clinical scores were all significantly improved.
100% of patients would go for this procedure if needed.

All the patients would recommend this procedure to their friends if they would have the same problem.
Casuistic 1

15 years old youth

Had sport accident in January 2009

Scince his accident low back pain with radiculopathy L5 bothsids, moderate L5 motoric pulsy persistent

PR-Injektion therapy were not successful
Casuistic 2

40 years old Fellow
Since 1 year radiculopathy L5 right
No pulsy of muscle groups
PR-Injektion therapy had no effect
Rehab with no effect
He might lose his job, if he dosent go back to work in the near future
45 years old fellow
Previous decompression L4/5 with dynamic stabilisation.
Relief of pain for one year after first surgery
Radiculopathy for L4 and L5, no more neurologic deficiency, in MRI new LDH L3/4, osteochondrosis L4/5.
Now no more pain relief through conservative therapy
18 years old fellow complaining of radiculopathy S1 left since 6 months.
History of low back pain since 5 years.
4 weeks before surgery after gardening increase of pain.
2 days before surgery higher grade flat foot left.
MRI findings with LDH L5/S1
How it should not be done.
Young Caucasian male
Suffering of pain in his right leg since one year.
All none surgical therapy were not successfull.
MRI findings and X-Ray are available.
Conclusion
The LP-ESP II seems to recreate a function to the lumbar spine similar to the Human disc in terms of movement quality, effect on sagittal balance and absence of modification in the kinematics of the upper adjacent level.
In the present investigation, the outcome of patients who had undergone a lumbar total disc replacement was successful both regarding the pain relief and capacity to work. Also evaluated by the VAS score, the postoperative pain relief in these patients was statistically significant.
Thank you for your attention.