

Case Study: Extreme Lateral Interbody Fusion

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Many complex disorders and debilitating injuries of the spine that once required large incisions and long months of inactivity and recovery can now be corrected with minimally invasive techniques that spare muscle, drastically reduce blood loss and the need for transfusions, and allow patients to go home in days with minimal discomfort and lifestyle disruption.

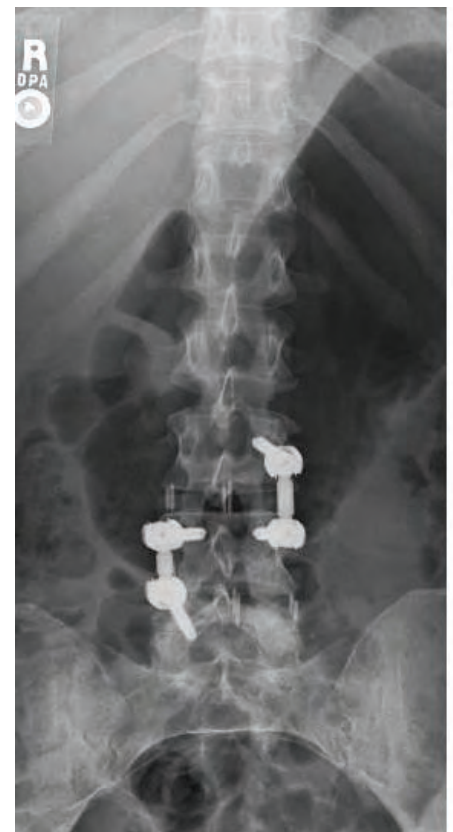
In certain cases, several techniques may be used in combination to access different levels of the spine and to accomplish a variety of objectives. Among the more common combinations today is the lateral approach to lumbar disc fusion with minimally invasive positioning of pedicle screws for stabilization.

Using the extreme lateral interbody fusion (XLIF) technique, we now access the spine of the low back (T10-L5) from the side, which provides a safe corridor that does not include the risk of abdominal complications that exists with the anterior approach. The XLIF procedure, performed under fluoroscopic imaging and electrophysiologic monitoring, can be used to treat spondylolisthesis, recurrent disc herniations, foraminal stenosis, degenerative disc disease, degenerative scoliosis and pseudoarthrosis.

This procedure was an ideal choice for a 40-year-old patient who had been involved in a car accident five years before she called my office to schedule an evaluation. The injury had caused serious degeneration of the two discs between L3 and L5, and she underwent lumbar laminectomy at the time. Fusion was discussed, but she wanted to wait until technology provided a minimally invasive option for multiple-level disc repair.

The patient had led a very active and athletic life, but severe pain after the accident restricted her activity and even her ability to drive. She was unable to achieve long-term pain relief even with selective nerve root blocks and other measures.

In her XLIF procedure, we removed the discs and replaced them with polyetheretherketone (PEEK) cages containing bone and bone morphogenetic protein (BMP) to enhance fusion. We then performed a percutaneous lumbar spine fixation, inserting



Postoperative X-rays of case study patient.

rods and screws through small incisions, using guide tubes and X-ray fluoroscopy for navigation.

All incisions were closed with resorbable stitches on the inside and glue on the skin to provide a good cosmetic result. Small dressings were placed on the wounds.

The patient was discharged from the hospital three days later. An out-of-state resident, she stayed locally with family for about a week before returning home. She was able to reduce her pain medication quickly to only Tylenol, and was eager to return to her previous activities. I saw her recently at six-month follow-up and she is doing very well.

Whether spinal fusion is performed traditionally or minimally invasively, the results are the same in terms of instrumentation and stability. Surgeons are always concerned that spi-

nal fusion will lead to destabilization of adjacent levels over time, and in this respect, I believe the minimally invasive approach may actually lower risk through reduced trauma to muscle, ligaments and structures.

Patients undergoing minimally invasive spine surgery are sidelined for only a short time and bear few scars, but radiographic evidence suggests that even complex spine procedures are now being accomplished under the surface without many of the risks and restrictions of major open surgery.



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