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Surgery versus Conservative Care for Acute Herniation of a Lumbar Disc with Radicular Symptoms of at Least 2-6 Weeks

Possible but Unproven Benefits of Surgery:

- **Conclusion:** There is insufficient evidence to conclude that for herniated lumbar disc with radicular symptoms (sciatica) not resolving in 2-6 weeks, discectomy produces better clinical outcomes than conservative therapy or that delaying surgery results in increased harms. Lack of valid evidence for efficacy does not prove that surgical intervention is ineffective, but surgical complications may be severe and should be considered prior to surgery.
- This conclusion results from a critical appraisal of a Cochrane systematic review [1] which was based on 4 randomized controlled trials (RCTs) of 40 potentially valid and useful RCTs found in the Cochrane search and a Delfini updating of the review (5/23/07) through a PubMed search for, and evaluation of, RCTs published after the Cochrane review. All received a Grade U (uncertain validity and/or clinical usefulness).
- A widely quoted study from 1983 (included in the Cochrane review) reported that patients with a history of acute sciatica (radicular pain) from a herniated lumbar disc not resolving in two weeks with conservative therapy reported greater benefits of surgery over conservative treatment at 1 year [2]. The SPORT trial published in 2006 did not report greater benefits of surgery over conservative treatment at 3 months, 1 year and 2 years [3].
- **Evidence for Efficacy:** The above studies are grade U (uncertain validity and usefulness). The 1983 study was a non-blinded RCT with lethal threats to validity. Re-analysis showed that approximately 80% of subjects undergoing surgery or treated without surgery reported fair or good results at one year. The SPORT study was also non-blinded and 43% randomized to surgery did not undergo surgery by 2 years and the 42% randomized to conservative care did receive surgery. The degree of missing data was 24%-27%.

Possible Harms of Surgical Intervention —

- **Evidence of Harms:** The following estimates of adverse outcomes are based on grade U evidence [3,4]

Harm	Number of Patients Out of One Thousand Estimated to Experience the Harm
Death following surgery	1-2
Meningitis	3
Blood clot in lung	5-6
Transfusion	20
Wound infection	20
Infection other than wound	40
Dural tear (tear in lining of spinal cord)	40
Injury to spinal nerve	34-35 (permanent: 7-8)
Hospital stay 2 nights or more	150
Additional surgery by 1 and 2 years	40 and 50

References:

1. Gibson JNA, Waddell G. Surgical interventions for lumbar disc prolapse. Cochrane Database of Systematic Reviews 2007, Issue 2. Art. No.: CD001350. DOI: 10.1002/14651858.CD001350.pub4.

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2. Weber H (1983) Lumbar disc herniation. A controlled, prospective study with ten years of observation. Spine. 1983. 8:131-140
3. Weinstein JN, Tosteson TD, Lurie JD, et al. Surgical vs nonoperative treatment for lumbar disk herniation: the Spine Patient Outcomes Research Trial (SPORT): a randomized trial. JAMA. 2006;296:2441-2450. PMID: 17119141
4. Jordan J, Konstantinou K, Morgan TS, Weinstein J. Herniated lumbar disc. Clin Evid 2005;14:1-4. Search date May 2005.

Prepared 5/23/07 by Delfini: Consulted *Delfini* R_x Messaging Scripts™ Template – www.delfini.org