INTRODUCTION

Patients who do not improve after lumbar surgery may be given the nonspecific label of failed back surgery syndrome (FBSS). **(Waguespack , et al., 2002**)

Patients may have persistent, recurrent, or new and different symptoms after surgery of the spine. **(Helms et al., 2009)**

Lumbar disc surgery involves part or complete laminectomy for access, partial facetectomy to free the lateral recess, and removal of accessible disc material from spinal canal and disc space, in varying combinations. Each component results in the appearance of epidural granulations, of variable amount and extent, and finally in mature fibrous tissue. The importance of this as a cause of recurrent symptoms after operation has been greatly diminished by imaging studies in which both the prevalence and severity of these processes have been shown to be entirely similar in patients who are pain-free after operation. However, it is still useful to distinguish these reactive processes from recurrent or residual disc material, the presence of which continues to be a firm indication for re-operation**. (Stevens et al., 2008)**

Incidence of FBSS reportedly occurs in 10% to 40% of patients following low back surgery **(Mall et al., 1983)**. Immediate postoperative complications such as epidural hematoma, retained fragment, or acute disk reherniation are relatively uncommon. Delayed complications such as discitis and osteomyelitis are rare, seen in 1% to 3% of cases. **(Boden et al., 1992)**

Failed-back surgery syndrome remains a challenge for spinal surgeons. It can be related to several causes, including poor surgical indication, misdiagnosis, surgical technique failure, spondilodiscitis and fibrosis. Fibrosis has been associated with a poorer outcome in lumbar disc surgery, although its role in the generation of symptoms is not yet clear**.(Almeida et al., 2008)**

Etiology and pathology. There are many causes for FBSS. Some are related to the surgery; other are not. Surgically related causes for FBSS include epidural hematoma, recurrent HNP at the operated site, discitis and osteomyelitis, epidural scar, arachnoiditis, and meningocele or CSF fistula **(Ruscalleda 1992)**. Common nonsurgical causes of FBSS are HNP at a nonsurgical site, facet arthrosis, spinal stenosis, spondylolysis with or without spondylolisthesis, and referred pain from other areas such as hip disease. Less common causes of FBSS include conus medularis or filum terminate tumor,

pelvic neoplasm, and nonneoplastic cyst such as intrasacral meningocele, intradural arachnoid cyst, or facet joint (synovial) cyst. Spinal, meningeal or, especially, nerve root inflammation are also potential causes of FBSS. **(Jinkins 1993)**.

MRI is the method of choice for differentiating epidural scar from herniated disc. Herniated disc material is of intermediate signal intensity and blends with the intervertebral disc on T1-weighted images. Mass effect is seen in up to 69% of patients and may mimic the preoperative findings .The central substance of the herniated disc should not enhance. Peridiscal scar causes peripheral enhancement in the majority of recurrent/residual disc herniations **(Rumboldt et al., 2006).**

Imaging of recurrent pain following lumbar surgery, often with a clinical presentation that is poorly specific in nature, is sometimes difficult. Selection of the initial imaging technique must simplify the diagnostic work-up. Because of its high contrast resolution, pre- and postcontrast MRI is the most effective imaging technique. (**Sarrazin 2003**).

MR imaging is capable of differentiating postoperative epidural fibrosis and recurrent disc herniation. This is important since the latter can be an indication for reintervention. On postcontrast T1- WI, herniated disc material shows no or minor enhancement. While epidural fibrosis enhances intensely, especially in the first years after surgery. However, smaller disc fragments or ‘older’ recurrent herniated discs may progressively show more enhancement due to secondary inflammatory changes. It is important to note that when the intervertebral disc space narrows after discectomy, secondary foraminal stenosis may occur, causing irradiating pain without recurrent herniation. in location. Spondylodiscitis is frequently caused by bacteria or tuberculosis .Postoperative spondylodiscitis can be difficult to diagnose in the early postoperative phase, since normal (inflammatory) postoperative changes may resemble infectious pathology**.(Van Goethem 2006).**