Description:
A number of minimally invasive techniques have been developed to treat low back pain related to disc disease. The techniques can be divided into two broad categories: techniques which remove or ablate disc material to relieve compression of the nerve roots and techniques that alter the biomechanics of the disc annulus.

Techniques that remove disc material either by using laser or radiofrequency energy include laser discectomy and disc nucleoplasty.

Laser discectomy uses bipolar radiofrequency energy in a process referred to as coblation technology. It involves placement of the laser within the nucleus under fluoroscopic guidance and then activated to ablate disc material and thus decompress the disc. Due to differences in absorption, the energy requirements and the rate of application differ among the lasers. It is unknown how much disc material must be removed to achieve disc decompression. Protocols vary according to the length of treatment, but typically the laser is activated for brief periods only.

Disc nucleoplasty for decompression of the intervertebral disc, uses bipolar radiofrequency energy in a process referred to as coblation technology. The device uses multiple small electrodes that emit only a small portion of the energy used in traditional radiofrequency energy systems. The nucleus tissue of the herniated disc is removed with a low-temperature plasma field of ionized particles. These particles break down the molecular bonds of the tissue, which creates channels in the disc. The channels are then treated, resulting in a zone of thermal coagulation. The proposed advantage of nucleoplasty and discectomy is that it provides a controlled and highly localized ablation, which results in minimal damage to surrounding tissue. These procedures are distinct from the IDET and PIRT procedures as they are designed to ablate disc material to decompress the disc.

Techniques that alter the biomechanics of the disc include, but are not limited to, thermal Intradiscal procedures which are commonly identified as intradiscal electrothermal therapy (IDET), intradiscal thermal annuloplasty (IDTA), percutaneous intradiscal radiofrequency thermocoagulation (PIRFT), intradiscal biacuplasty (IDB). There are times that TIPs are identified or labeled based on the name of the catheter/probe(s) that is used (e.g., SpineCath, discTRODE, SpineWand, Accutherm, or TransDiscal electrodes). Each technique or device has it own protocol in which energy is applied in distinctly different manners, which make each procedure unique.

Intradiscal electrothermal annuloplasty (IDET) and intradiscal electrothermal annuloplasty (IDTA) procedures use a flexible catheter with a moveable tip that contains a heating element. The catheter is threaded into the disc annulus. Electrothermal heat is generated with the thermal resistive coil, gradually raising the temperature to 194 degrees F (90 degrees C) and maintaining it for approximately 16 minutes. After heating, the catheter is removed and an antibiotic is injected into the disc to guard against infection. The goal of this procedure is to tighten the fibrous structure of the annular tissue without excessively damaging it, and destroy nerves resulting in decreased nerve compression and pain. The nerves will regenerate, and repeat procedures may be recommended, however, it is not known how many times the procedure may be repeated or if the duration of relief will change.

Percutaneous intradiscal radiofrequency thermocoagulation (PIRFT) procedure uses a radiofrequency catheter with an electrode tip, which is inserted into the center of the nucleus of the affected disc. The procedure is usually performed under local anesthesia and placement of the electrode tip is verified by fluoroscopy before the tip is heated. The high-frequency alternating current that flows from the tip causes the targeted tissue to be heated. The electrode is slowly heated to a temperature of 70 degrees centigrade and maintained at that temperature for 90-360 seconds. The goal of this procedure is to cause the collagen in the disc wall to contract and thicken. Nerves in the wall of the disc may also be inactivated.

Intradiscal Biacuplasty (IDB) utilizes two straight internally cooled radiofrequency probes, to lesion the nociceptors in the intervertebral disc. It enables controlled lesioning within the disc by utilizing a bilateral approach allowing radiofrequency energy to be delivered between the electrodes in the disc.
Radiofrequency energy is used to heat the tissue while circulating water is used to cool the tissue that is near the disc.

National Institute for Health and Clinical Excellence (NICE) guidance published in 2004 indicates that the current evidence on safety and efficacy of percutaneous intradiscal electrothermal therapy and percutaneous intradiscal radiofrequency thermocoagulation for lower back pain does not appear adequate to support its use.

Randomized controlled trials in appropriately selected patients are needed to evaluate the efficacy of intradiscal biacuplasty, disc nucleoplasty, and laser discectomy in comparison with alternative therapies.

**Medical Criteria:**
Not applicable.

**Policy:**
Percutaneous annuloplasty (e.g., intradiscal electrothermal annuloplasty, percutaneous intradiscal radiofrequency thermocoagulation, and intradiscal biacuplasty) are considered not medically necessary because there is insufficient clinical evidence in published, peer-reviewed medical literature to support a conclusion concerning the health outcome or benefits associated with these procedures.

Disc nucleoplasty and laser discectomy are considered not medically necessary because there is insufficient clinical evidence in published, peer-reviewed medical literature to support a conclusion concerning the health outcome or benefits associated with these procedures.

**Coverage:**
Benefits may vary between groups/contracts. Please refer to the appropriate evidence of coverage, subscriber agreement, or Rite Care contract for the applicable "Services Not Medically Necessary."

**Coding:**
The following codes are considered not medically necessary:
22526
22527

The following unlisted CPT code should be used when filing for any method of percutaneous intradiscal annuloplasty other than electrothermal:
22899

The following HCPCS code is considered not medically necessary:
S2348

CPT code 62287 aspiration or decompression procedure, percutaneous, of nucleus pulposus of intervertebral disk, any method, single or multiple levels, lumbar (eg, manual or automated percutaneous discectomy, percutaneous laser discectomy), is considered not medically necessary when the procedure uses bipolar radiofrequency energy in a process referred to as coblation technology.

**Also Known As:**
Intradiscal Electrothermal Annuloplasty
RFTC
PIRF
PIRT
Radiofrequency Ablation of Annulus
Intradiscal electrothermal coagulation (IDET)
Annuloplasty
Disc Nucleoplasty
Laser discectomy

**Related Topics:**
Not applicable

**Published:**
References:

Clinical Trials on Disc Biacuplasty to Treat Chronic Discogenic Low Back Pain (TD-RCT-002) This study is currently recruiting participants. Verified by Baylis Medical Company, September 2008. http://clinicaltrials.gov/ct2/show/NCT00749554?cntry1=NA%3ACA&rcv_s=08%2F25%2F2008&rank=24


Roniger, L, Beize, J., “IDET outcomes continue to improve with time—Two-year study results should improved pain and function scores in patients with chronic low back pain,” Biomechanics, Sept 1, 2002 p33.

“Value of IDET still up in the air after two randomized controlled trials arrive at conflicting results,” The Back Letter, July 2003, v18, i7, p73(3).


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