

Titanium Interspinous Process Device

A 'titanium interspinous process device (IPD)' is a minimally invasive spinal implant placed between the spinous processes of lumbar vertebrae. It is typically used to treat lumbar spinal stenosis, particularly in patients whose symptoms improve with spinal flexion.

Definition

A titanium interspinous process device is an implant made of titanium alloy, designed to act as a spacer between spinous processes, limiting spinal extension and decompressing neural elements.

Mechanism of Action

- Limits lumbar extension.
- Maintains or increases the interspinous distance.
- Enlarges the neural foramina and central canal.
- Reduces load on the facet joints and posterior annulus.

Indications

- Lumbar spinal stenosis with neurogenic intermittent claudication.
- Symptom relief in flexion.
- Mild to moderate cases without significant instability.

Contraindications

- Severe spinal instability or spondylolisthesis > Grade I.
- Osteoporosis or poor bone quality.
- Active local or systemic infection.
- Known allergy to titanium (rare).

Common Devices

- Coflex® (Paradigm Spine)
- Superion® (Vertiflex)
- DIAM™ (Medtronic)
- (Note: X-STOP® was withdrawn from the market)

Advantages

- Minimally invasive approach.
- Preserves segmental motion.
- Shorter recovery times.
- Possible use under local anesthesia.

Complications

- Fracture of the spinous process.
- Device migration or loosening.
- Infection.
- Persistent or recurrent symptoms.

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