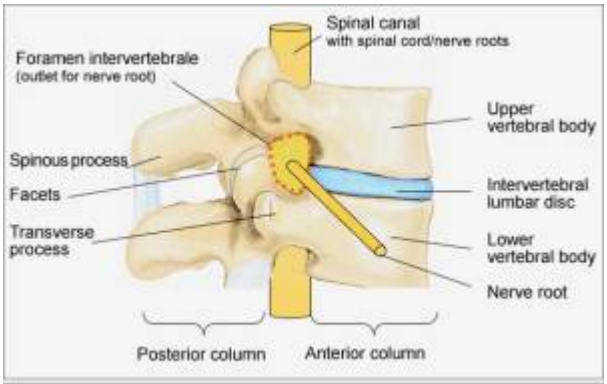
Lumbar intervertebral foramen



Normal motion segment (two adjacent vertebrae, disc and ligaments) of the lumbar spine

The branch of the segmental artery around the neural foramen may be damaged during PELD using the transforaminal approach.

The Lumbar intervertebral foramen can be narrowed further by characteristic changes in the facet joints such as synovial cysts, osteoarthritis, or hypertrophy of articular processes

Previous studies have reported position-dependent changes of the lumbar intervertebral foramen (LIVF) dimensions at different static flexion-extension postures.

Human lumbar foramen dimensions show segment-dependent characteristics during the dynamic weight-lifting activity [1].

Atsushi et al pointed out that the dimensions of the intervertebral foramen changed constantly during daily activity, and symptoms in patients with spinal stenosis are therefore aggravated or relieved by the posture of their lumbar spine [2].

Narrowing of the disc space significantly reduces the vertical diameter of the foramen but has no significant effects on its sagittal dimensions. In contrast, the sagittal dimensions of the foramen are strictly related to the sagittal diameter of the spinal canal and the pedicle length. These results suggest that in patients with developmental or combined stenosis of the central spinal canal, a concomitant foraminal stenosis is likely to be present, or at least should be suspected [3].

Interspinous process devices

Interspinous process devices modify the surface area of the interspinous foramina in vitro. Clinical studies are needed to clarify patient selection criteria for interspinous process device implantation [4].

Interbody cage

For degenerative lumbar spinal stenosis, usage of interbody cage is more effective in terms of recovery of intervertebral space and foraminal height compared with usage of bone graft. However it brings no better clinical efficacy while the usage of autogenous morselized bone is more cost-effective. Two grafting methods yield similar overall clinical outcomes [5].

Anterior lumbar interbody fusion

Anterior lumbar interbody fusion results in significant indirect foraminal decompression [6].

Lumbar foraminal stenosis

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1)
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