Lumbar Disc Degeneration Induces Persistent Groin Pain

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FROM ABSTRACT

This is a prospective study of patients with groin pain but without low back pain.

The authors selected 5 patients with groin pain alone for investigation. The patients suffered from groin pain and showed disc degeneration only at 1 level (L4-L5 or L5-S1) on magnetic resonance imaging. Patients did not show any hip joint abnormality on radiography or magnetic resonance imaging. To prove that their groin pain originated in degenerated intervertebral discs, we evaluated changes in groin pain after infiltration of lidocaine into hip joints and examined pain provocation on discography, pain relief by anesthetic discoblock, and finally anterior lumbar interbody fusion surgery.

All patients were negative for hip joint block, positive for pain provocation on discography, and positive for pain relief by anesthetic discoblock. Furthermore, bony union was achieved 1 year after anterior interbody fusion surgery in all patients, and visual analogue scale score of groin pain was significantly improved at 1 year after surgery in all patients.

It is important to consider the existence of discogenic groin pain if patients do not show low back pain.

KEY POINTS FROM THIS ARTICLE:

1) “Many studies have described the existence of sensory nerve endings in the annulus fibrosus of the human lumbar intervertebral disc.”

2) The nerves that innervate the disc originate from the sinuvertebral nerves. The sinuvertebral nerve is derived from the anterior primary ramus of the spinal nerve and the post-ganglionic sympathetic efferents.

3) The groin area is innervated by the genitofemoral and ilioinguinal nerves, which are derived from the L1 or L2 spinal nerves. “Groin pain, therefore, is considered to be referred pain, distinct from nerve root pain affected by intervertebral discs.”

4) Patients who have degenerated lumbar discs at L4-L5 or L5-S1 may report groin pain.

5) In this study:
   • All patients had persistent groin pain alone without low back pain or radicular pain.
No patients had any degenerative change of the hip joint.

All patients had one level of disc degeneration, either at L4-5 (n=3) or L5-S1 (n=2).

All patients groin pain was made worse with discography.

CT revealed posterior annular disc tears without herniation in all 5 patients.

6) “In the current study, we showed change in groin pain in 5 patients with groin pain alone originating from lumbar degenerated disc, with no accompanying low back pain or radicular pain.”

7) “It is important to consider discogenic groin pain if patients do not show low back pain.”

8) There is evidence that the lower lumbar discs are actually innervated by several levels of the upper lumbar spinal nerve roots. This is important because it is the upper lumbar roots that innervate the groin. This creates biological plausability for lower lumbar disc disease to create referred pain to the groin.

9) There is also evidence that the pain fibers of the lower lumbar discs enter the spinal canal through the L2 sympathetic ganglion.

10) There is “direct evidence for referred groin pain from [lower lumbar] intervertebral discs.”

11) “Considering previous reports and the current study, we concluded that referred groin pain originates from the disc via the L2 spinal nerve.”

12) There is also evidence (from other studies) that groin pain may be caused by mechanisms other than discogenic referral, which should also be clinically considered:

• From nerve irritation root (primarily L2)

• From irritation/injury of structures that are innervated by L2 nerve root:
  • Lower lumbar multifidus muscle
  • Lower lumbar facet joints

COMMENTS FROM DAN MURPHY

This study not only suggests that lumbar disc disease can cause groin pain, but also suggests that treatment to the L2 region may improve both discogenic low back pain as well as groin pain.