Dear Editor,

Chronic testicular pain is a common presenting problem in urology and general practitioner’s clinics [1]. The causes of testicular pain vary, ranging from local diseases, referred pain, to idiopathic in nature. Failure in identifying the true origin of testicular pain often misleads the management resulting in poor outcomes with costly procedures and years of psychological distress [2].

Although chronic low back pain is one of the most common causes of disability, it is rarely reported concomitant with testicular pain. The latter is often ignored because many clinicians are not aware of the referred testicular pain caused by degenerative lumbar disease. Awareness of the related innervations between the lumbar spine and the testis is the key in understanding the connection between low back pain and testicular pain. With this awareness, we present a case with both degenerative spondylolisthesis and testicular pain that was diagnosed and managed successfully.

A 62-year-old man was admitted with low back pain, bilateral neurogenic claudication, pain and numbness in his right lower extremity, as well as right testicular pain for 10 months. The symptoms became more intense with prolonged walking or standing, and subsided after rest in bed. The concomitant testicular pain was episodic colicky in nature, which occurred five to six times a day and lasted 30–60 minutes each episode. With all symptoms started at the same time, the testicular pain progressed constantly before admission, and all conservative treatments such as physical and medication therapy failed.

Physical examination showed the tenderness at the L4 and L5 spinous processes. Straight leg raising test was negative on either side. Strength, sensation, and reflexes in his lower extremities were normal bilaterally. Examination by a urologist revealed mild tenderness of the testes and scrotum. Further examination with ultrasonography of the testes and inguinal regions was normal. Lateral radiograph displayed L4/5 grade 1 degenerative spondylolisthesis. The patient was unable to have the magnetic resonance imaging (MRI) examination because of the coronary stent implantation in his heart. Myelogram and computed tomography scan revealed the central spinal stenosis at L4/5 level and L5 nerve root canal stenosis on both sides.

Because the patient did not respond to nonoperative treatment, he underwent a decompressive surgery with the posterior dynamic stabilization system (Zimmer Spine, Minneapolis, MN, USA) at L4/5 segment. During the surgical decompression, bilateral laminotomy was performed with the resection of the superior half of the L5 laminas and the inferior half of the L4 laminas along with undercutting the L4/5 facet joints in attempt to decompressing the nerve roots in the lateral recesses. The olisthesis was almost completely corrected after the posterior dynamic stabilization system was implanted. Low back pain, claudication, as well as right lower extremity pain and numbness disappeared immediately after the surgery. So did the right testicular pain 2 weeks after the surgery. His symptoms had not returned following a 9-month follow-up interval.

Degenerative lumbar spondylolisthesis is common in individuals older than 50 years and is most commonly seen at L4/5 level. Surgery is indicated if conservative treatment fails and quality of life is significantly reduced. The classic surgical treatment is decompression to relieve radicular symptoms and neurogenic claudication. Fusion is added to relieve back pain from a degenerated disc and/or facet joints by elimination of instability and to prevent progression of spondylolisthesis. Dynamic stabilization has been introduced since 1994 as a motion preserving device in an attempt to overcome the disadvantages of fusion and provide sufficient stability to restore normal segmental kinematics, prevent instability, and avoid adjacent segment degeneration.

With regard to this patient, the symptoms of low back pain, claudication, leg pain and numbness, as well as testicular pain all disappeared after the surgery. The slipped vertebra was almost completely reduced with the posterior dynamic stabilization system, so relief of back pain and leg pain is to be expected. However, this is not the case for the testicular pain, at least before surgery. Evidence for the surgical treatment of degenerative spine disease with chronic testicular pain is lacking.

Relief of testicular pain in this case can be explained as the testis shares common innervations and afferent pathways with lumbar spine. The sensory innervation of the testis and epididymis is mediated by automatic and spinal cord. Int J Radiat Oncol Biol Phys 1993;27:1029–33.


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somatic fibers that are then transmitted in the genital branch of genitofemoral nerve and ilioinguinal nerve that stem from L1 and L2 spinal nerve roots [3]. Basic and clinical studies have overwhelmingly revealed that low back pain originating from the disc or facet joints is transmitted nonsegmentally via the paravertebral sympathetic chain and then through the visceral sympathetic afferent fibers carried in the L1 and L2 spinal nerve roots. Testicular pain is recognized as the referred pain transmitted in the genital branch of genitofemoral nerve and ilioinguinal nerve. DRG = dorsal root ganglion.

The knowledge of these anatomic relationships led us to believe that the testicular pain may be recognized as the referred pain originating from the diseased L4/5 disc and/or facet joints transmitted in the genital branch of genitofemoral nerve and ilioinguinal nerve (Figure 1). After surgical decompression and dynamic stabilization of L4/5 segment, it is not surprising that low back pain originating from the L4/5 disc and/or facet joints disappeared, and so did the testicular pain. Doubleday et al. [8] reported a patient with chronic back pain and testicular pain of unknown origin. His MRI of upper lumbar spine revealed T12/L1 disc herniation. After a course of physical therapy of the thoracolumbar spine, the patient obtained complete symptom resolution. Cantwell et al. [9] reported nine patients from a total of 42 young men with testicular germ cell malignancy having back pain as a major presenting symptom. The authors suggested that patients with back pain should be examined for testicular disease and should also be inquired about past testicular abnormalities.

The present study indicates that for the patients with chronic low back pain and concomitant testicular pain, lumbar origins of symptoms should always be considered after exclusion of local causes of scrotal pain. The excellent outcome obtained in the patient was attributed to treatment of degenerative lumbar spondylolisthesis.

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References