Intermittent Priapism in Degenerative Lumbar Spinal Stenosis: Case Report

Dejeneratif Lomber Dar Kanala Bağlı Aralıklı Priapizm: Olgu Sunumu

ABSTRACT

BACKGROUND: Symptomatic lumbar spinal stenosis produces gradually progressive back and leg pain with standing and walking, relieved by sitting or lying. One of the uncommon symptoms is involuntary intermittent penile erection due to spinal canal stenosis. This symptom is very rare and often forgotten when history is taken.

METHODS: In this case report, a patient suffering from intermittent priapism due to degenerative spinal canal stenosis and spondylolisthesis is described. On admission his symptoms were intermittent neurogenic claudication and involuntary erection provoked by walking a short distance.

RESULTS: Bilateral laminectomy and posterior fusion was performed. His symptoms resolved over the first postoperative days.

CONCLUSION: Cauda equina compression due to LSS may rarely cause intermittent priapism. This rare symptom should not be forgotten when taking the patient's history and should also be kept in mind during follow-up.

KEY WORDS: Lumbar, Spinal, Stenosis, Neurogenic, Priapism, Intermittent

ÖZ

AMAÇ: Symptomatik lomber dar kanal olgularında, zamanla artan bel ağrıısı, ayakta durmakla ve yürütmeke artan ve dinlenmekle gerileyenacak ağrıısı şikayetleri oluşmaktadır. Oldukça nadir rastlanan semptomlardan bir tanesi de istem dışı oluşan aralıklı penil ereksiyondur. Bu semptom hastaların hikayesi soruşturulurken sıkılıkla unutulur.

YÖNTEM: Bu olgu sunumunda, lomber dar kanal ve spondilolistezise bağlı aralıklı priapizmi olan bir hasta sunuldu. Başvuru sırasında hastanın şikayetleri, kısa mesafe yürütmeke oluşan aralıklı nörojenik klaudikasyo ve istemizli penil ereksiyondur.

BULGULAR: Bilateral laminektomi ve posterior füzyon uygulandı. Ameliyat sonrası erken dönemde hastanın semptomlarında belirgin düzelme gözlandı.


ANAHTAR SÖZCÜKLER: Lomber, Spinal, Stenoz, Nörojenik, Priapizm, Aralıklı

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BACKGROUND

Lumbar spinal stenosis (LSS) caused by hypertrophy of facets and ligamentum flavum may be exacerbated by disc bulging or spondylolisthesis. Symptomatic stenosis produces gradually progressive back and leg pain with standing and walking, relieved by sitting or lying. One of the uncommon symptoms is involuntary intermittent penile erection due to spinal canal stenosis. This symptom is very rare and often forgotten when the history is taken.

CASE

This 74-year-old male patient was admitted for intermittent claudication caused by walking approximately 50 meters. At the same time he had noticed penile erection without sexual stimulation. The erection was not painful and he had sexual arousal at the same time. The urinary bladder and bowel functions were normal.

Bilateral L5 dermatomal hypoesthesia, abolished achilles reflexes and positive femoral stretching tests were observed on neurological examination. Repeated examinations after exercise showed no change in the findings but a firm erection of the penis was observed, which become flaccid after rest. Physical examination revealed no abnormal findings. Lumbosacral spine x-rays suggested L4-L5 lumbar spondylolisthesis (Figure 1). Magnetic resonance imaging (MRI) of the lumbar spine showed diffuse protrusion of the intervertebral disc, spinal stenosis caused by anterolisthesis and hypertrophic facets and bilateral foraminal stenosis at L4-5 level (Figure 2). Electromyography (EMG) of lower extremities demonstrated chronic and partial involvement of bilateral L4, right L5 and S1 roots at rest. EMG examination repeated after the exercise provoking neurogenic claudication and the penile erection showed no change. Other causes of priapism like hypercoagulopathies, drug usage and malignancy were also investigated but no pathology was found.

The patient underwent bilateral L4 partial hemilaminectomies with medial facetectomies, bilateral L4 and L5 foraminotomies and L4-L5 discectomy followed by posterior interbody fusion with mesh and autogenous bone graft and L4-L5 posterior transpedicular fixation (Figure 3).

The postoperative period was uneventful with total resolution of the patient’s preoperative symptoms. Exercise tolerance, especially by walking, was restored to normal. Penile erection related to walking had also cleared up completely. He had no complaints at six years follow-up.
DISCUSSION

Lumbar spinal stenosis occurs predominantly in elderly men and can be congenital, acquired or both. Some acquired causes are spondylosis, spondylolisthesis, trauma, lumbar spinal fusion and diseases of the skeletal system such as achondroplasia and Paget’s disease. This stenosis develops as a result of ligamental hypertrophy, diffuse disc protrusion and degenerative changes of bones and joints. (2)

Signs and symptoms of lumbar spinal stenosis are back pain, sciatica, neurogenic intermittent claudication, motor and sensory deficits and reflex changes. Aching spreading over the sacral dermatomes or painful paresthesias can sometimes develop. These symptoms may be exacerbated by walking and flexion of the lumbar spine such as sitting or crouching forwards and relieved by resting for several minutes (6, 8, 17).

Sensory and motor symptoms of cauda equina are sometimes accompanied by disturbances of bladder function, which may be in the form of retention, incontinence, or recurrent infections caused by the residual urine (14). By presentation of micturation symptoms, cystometry may be normal (14). Rarely cauda equina compression due to LSS may cause intermittent priapism. Brish et al. reported in 1964 a patient with episodic transient erection due to LSS (3). Ravindran also reported in 1976 spontaneous priapism without sphincter disturbances, precipitated by walking (13). In both cases, the patients also had neurogenic claudication and total relief of symptoms was obtained by decompressive laminectomy. Sixteen patients (including our patient) were reported in the literature to suffer from intermittent priapism due to LSS (2, 4, 5, 7, 9, 11, 12). Our patient had severe LSS with spondylolisthesis demonstrated by radiological findings.

Penile erection is a complex involuntary behavioural response that depends on the integration of vascular, endocrine and neurological mechanisms. Stimuli for erection can be classified as psychogenic (visual, olfactory, gustatory etc.) and reflexogenic (stimulation of the glans penis) (18).

Detumescence is also complex. It occurs if reflexogenic and psychogenic impulses are not maintained, and also post ejaculation (sympathetically mediated). It is likely that detumescence is due to the diminution of parasympathetic cholinergic (vasodilator) impulses and a surge of sympathetic vasoconstrictor impulses mediated by alpha adrenoceptors (18). Following this, NO release ceases and the Polsters on the arterioles contract and those on the venules relax. Outflow now exceeds inflow and the penis becomes flaccid (10). The intermittent priapism exhibited by the patient is related to parasympathetic dysfunction. We believe that LSS causes
parasympathetic impulse block by compression of sacral nerves (S2, S3, S4). Priapism is a persistent involuntary erection which is unrelated to sexual activity (1, 15). Genitourinary trauma, saddle-type injury, direct arterial invasion of penile neoplasm, idiopathic, drugs and medications (intracavernous vasoactive injections (e.g. papaverine), sildenafil citrate (Viagra), antidepressants, antipsychotics, antihypertensives, anticoagulants (heparin and warfarin), androstenedione, cocaine, alcohol, marijuana), thromboembolic or hypercoaguable states (sickle cell disease, polycythemia, thalassaemia), dialysis, vasculitis, mycoplasma, malignancy, solid cancers (bladder, prostate, penis), leukaemia, metastasis and neurological conditions (spinal cord stenosis, spinal cord transection, trauma to the medulla) can cause this uncomfortable or painful entity (16). In our case, this symptom was completely due to LSS which resolved after decompressive laminectomy, foraminotomy and posterior stabilisation with pedicle screws.

Conclusion: Cauda equina compression due to LSS may rarely cause intermittent priapism. This rare symptom should not be forgotten when taking the patient's history and should also be kept in mind during follow-up.

REFERENCES