

A Buttock Soft Tissue Tumor and Sciatica: Another Clinical Utility of Ultrasound-Guided Diagnosis Block

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Abstract

Sciatica is a symptom rather than a specific diagnosis. It usually consists in a radiating leg pain from the buttock toward the knee, ankle, foot and toes. Pain could be associated with neurological deficit, such as muscle weakness and reflex deficit.

The prevalence of sciatica in spine pathology is highly variable with values ranging from 1.6% to 43%. Between 70%-90% of the cases of herniated disc with nerve-root compression caused sciatica. Other causes are lumbar canal or foraminal stenosis, tumours or cysts.

We present a case evaluated in our Pain Unit with left-sided sciatic pain after an intense voluntary movement two months ago. He was previously pharmacologically treated for a non-specific low back pain with pseudo-sciatica. One week later buttock soft tissues sarcoma was diagnosed. He deceased two weeks after the diagnosis.

Keywords: Sciatica; Sarcoma; Buttock soft tissue tumour; Ultrasound guidance; Red flags; Low back pain

Introduction

Low back pain (LBP) is a very common condition. It affects about 70% of the population with several degrees of symptom severity. Low back-related leg pain or sciatica is one of the most common variations of LBP [1]. Sciatica is a neuropathic pain condition that affects the lower extremities and it must be considered as a symptom rather than specific diagnosis. There are several diseases to consider as its origin: herniated disk (70-90%), vertebral fracture (4%), lumbar canal stenosis (3%), cancerous origin (0,7%), ankylosing spondylitis (0,3%) or infection (0,01%) [2].

In the first clinical approach it is basic to review clinical history and perform a complete anamnesis and physical examination. The main objective is to detect *red flags* or risk factors in order to suspect a "non-benign" aetiology (3-4%) [3,4]. Soft tissue sarcomas are relatively rare [5]. To make the diagnosis even more difficult these tumours can remain undetected for several months after onset pain.

There is a consensus to treat sciatica [6]. Treatment should be conservative for the first six to eight weeks. Natural clinical course of acute sciatica is generally favourable and autolimited.

Case Report

The present report deals with a patient suffering from severe lower extremity neuropathic pain due to an unknown buttock soft tissue tumour exhibiting increasing pressure upon the sciatic nerve.

A 59-years old caucasian male was evaluated in our Pain Department. He presented a two month history of a mixed nociceptive and neuropathic pain in his left buttock, radiating in the dermatomes L5-S1 (left-sided sciatic). The patient attended Emergency Service nine times before this visit. He was evaluated following our systematic anamnesis and physical examination. As a possible cause of his symptoms, he remembered an intense voluntary movement three months ago (pain appeared due to overexertion from picking up his grandson two months ago). The pain was continuous although it was more severe at night. The pain worsened during sitting position and

crossing legs. Sometimes his pain was so intense that movement was impossible to perform. There was some relief in supine position.

There was no previous history of trauma in the lumbar or pelvic area. At the time of first visit, he did not have fever, weight loss, anorexia, asthenia or other associated symptoms. He had a chronic low back pain history, but he was otherwise healthy. When asked, he scored nine out of ten on a verbal analogue scale (VAS). He reported burning, itching, aching and tingling pain in his left leg and left toes. Furthermore he reported a score of twenty-six on Leeds assessment of neuropathic pain symptoms and signs (LANSS). He described a continuous paraesthesia radiating to the left leg and left toes that increased over time.

Physical examination was anodyne (without motor or sensitive deficits) except two items: muscle lumbar contracture and provoked pain during adduction, internal rotation and flexion of left hip.

One month after pain started a lumbar magnetic resonance imaging (MRI) was performed. It revealed a L3-L4 herniated disc, lumbar facet joint osteoarthritis with bilateral lumbar foraminal stenosis. All these findings could explain symptoms like lumbalgia and radicular pain. He was pharmacologically treated for a non-specific low back pain with pseudo-sciatica with acetaminophen 4 g/day, diclofenac retard 150 mg/day, gabapentine 2400 mg/day and meperidine during his visits to emergency room. The diagnosis made in the Emergency room was mechanic low back pain with left leg radiated pain. The first choice pharmacologic treatment proved to be insufficient and he was

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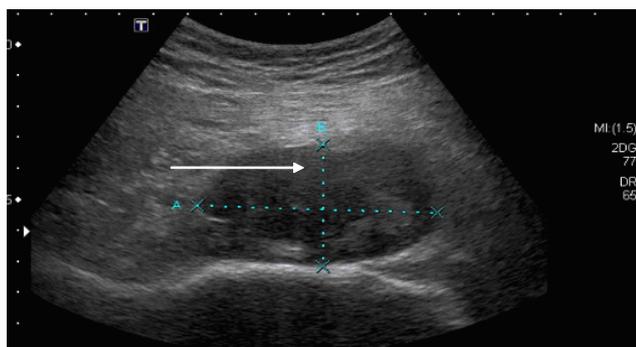
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repeatedly admitted in the emergency room department in order to treat the pain.

A left piriformis myofascial syndrome was suspected. Written and oral informed consent was taken, a piriformis muscle diagnostic block under ultrasonographic guidance was performed (Sonosite S-Nerve®). We opted for a 100 mm continuous nerve stimulation needle (Plexygon. Nerve Stimulator. Vygon®). Motor responses were not obtained at 1 mA. Levobupivacaine 12.5 mg (Levobupivacaine 0,25%, 5 ml) was administered as bolus doses (Braun®). There were no incidences during this procedure.

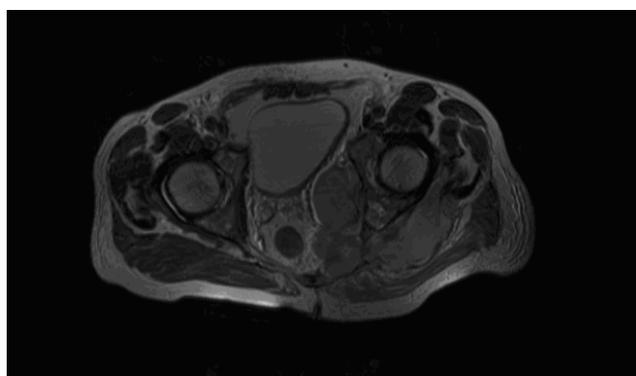
Pain recurred four days after the injection, and could not be controlled with opioids (immediate release oxycodone 10 mg). The patient had lost 5 kg of weight during the last month. He did not describe any other symptoms. Standard blood tests were taken. Abnormal items were: sedimentation velocity rate 45 mm (2–20 mm), reactive C protein 131.70 mg/L (0.00–10.00 mg/L) and LDH 1128 U/L (313–618 U/L).

In view of the seriousness of his general health the patient was admitted to monitoring, pain treatment and other studies. The pain team decided to perform another piriformis muscle block, during the target ultrasonography, a buttock mass was identified. The procedure was discarded and further image studies were performed, soft tissue ecography (Figure 1) and a pelvic MRI (Figure 2). Both demonstrated a large tumour in the deep muscles of the left buttock, with intrapelvic



Solid mass in left buttock. Theoretical location of the gluteus minimus and middle left, about 14×7×4 cm in length

Figure 1: Ecography soft tissue buttock.



In hemipelvis left there is a voluminous mass of approximately 9 cm×11×9 cm in diameter (longitudinal×cross×AP), which invades and infiltrates the piriformis, obturator internus, gluteus medius and gluteus minimus partial left. There is another similar tumor in the right pectineus thickness of approximately 9×2.4×5 cm in diameter

Figure 2: Pelvic MRI.



Images compatible with many thoracic and abdominal metastases, it affected to lymphatic nodes, epicardic fat, adrenal nodes, renal capsule and psoas fascia

Figure 3: Thorax computerized axial tomography scan.

mass displacing without invading the pelvic organs. Biopsy was performed and histological examination established the diagnosis of buttock soft tissue sarcoma.

The following days the patient presented somnolence, 38°C fever, dispnea, abnormal pulmonary auscultation, 90% haemoglobin saturation in pulsioximeter and urinary incontinence. Chest X ray and thorax computerized tomography scan (Figure 3) was performed. His lungs, kidneys and adrenal glands were affected. He was transferred to Oncology Service. Two days later he had neurological impairment and severe respiratory failure. The medical team with his family decided on taking comfort measures and limiting therapeutic efforts. The patient died twenty days after diagnosis.

Discussion

The present report describes a case of severe sciatic pain. Neuropathic symptoms prevailed and resisted to conventional oral and non-pharmacological pain treatment. Ensuing deafferentation mechanisms might be explained by the overall poor pain control in this patient. Deafferentation pain denotes a type of pain that results from complete or partial interruption of afferent nerve impulses caused by lesions of either the central or peripheral nervous system. Patients with deafferentation pain usually display varying degrees of sensory loss characterized by disturbances in pain and temperature sensation. Many patients also experience abnormal sensory phenomena such as allodynia, hyperalgesia, dysesthesias, and hyperpathia.

Invasive techniques are an option to treat refractory acute or chronic pain. It is considered appropriate for management of severe neuropathic pain in patients intolerant or refractory to other treatments, such as oral or systemic analgesics. Eventually, we decided that a regional technique could be an option in this case to diagnose implication of piriformis muscle.

History and physical examination are advisable in patients with LBP and sciatica to rule out other serious entities such as neoplasms, osteomyelitis, vertebral fractures, cauda equine syndrome, spinal stenosis, and ankylosing spondylitis, and thus make a correct diagnosis and prescribe appropriate treatment. Consequently, most clinical guidelines mention what are known as red flags or warning signs of sciatic and low back pain (Table 1) [2,4,5,7]. Our case deals with the relationship between the sciatica and soft buttock tissue sarcoma so we focused our attention on differential diagnosis of sarcoma.

1.	Age <20 or >50 years on first time
2.	Fever
3.	Toxic Syndrome: asthenia, weight loss, anorexia
4.	Serious Trauma, fracture history
5.	History of cancer, users of intravenous drugs (VIH), immunodeficits, such as interventional techniques
6.	History of long steroids treatment
7.	Serious LBP doesn't improve or worsent during the night, worse with Valsalva Test
8.	Neurological deficit on lower extremities
9.	Cauda equine syndrome (retention or urinary incontinent, fecal incontinent, perineal anaesthesia)

Table 1: Low Back Pain and Sciatica Warning sign [3].

Location	No. Patients
Gluteus maximus muscle	29
Deep to gluteus maximus with extension through the greater sciatic notch	4
Gluteus maximus involvement with extension into the perineum	4
Subcutaneous	9
Gluteus medius and minimus	3
Gluteus minimus	1
Extension into pelvis through pelvic floor	2
Piriformis and obturator muscle involvement along with gluteus maximus	1
Extension between ischial tuberosity and femur	2
All the layers	3
Not recorded	15

Table 2: Location of buttock soft tissue sarcomas [8].

Diagnosis	No. Patients
Angiomatoid MFH	1
Chondrosarcoma	1
Clear cell sarcoma	1
Epithelioid leiomyosarcoma	1
Epithelioid sarcoma	2
Ewing's sarcoma	2
Fibrosarcoma	2
Leiomyosarcoma	11
Liposarcoma	9
Well differentiated	8
Pleomorphic	1
Malignant nerve sheath tumor	1
MFH	8
Myxoid MFH	1
Myxofibrosarcoma	4
Myxoid chondrosarcoma	1
Myxoid leiomyosarcoma	1
Myxoid liposarcoma	10
Without round cell differentiation	3
Focal round cell differentiation	7
Significant transition to round cell	1
Myxoid sarcoma NOS	1
Primitive neuroectodermal tumor	1
Rhabdomyosarcoma	2
Sarcoma NOS	4
Synovial sarcoma	9
TOTAL	73

MFH: Malignant Fibrous Histiocytoma; NOS: Not Otherwise Specified

Table 3: Histology of buttock soft tissue sarcomas [8].

Soft tissue sarcomas are malignant neoplasms arising from tissues derived from the primitive mesenchyme [8]. These tumours often remain undetected until they become large and deeply attached [9]. Thus, a high degree of suspicion must be maintained for any gluteal mass or sciatica type of pain that cannot be explained [10]. Sciatica can be caused from compression of the sciatic nerve at the greater sciatic notch or along its course [1]. A 12 year follow-up study was reported by Behranwala et al. [8] about buttock sarcoma with the following results (n=73):

1. The average age at presentation was 52 years (range 16-88 years). Our patient was 59 years old.

2. The presenting complaints were mass (n=53) and sciatica (n=13), local pain (n=6), fungating tumor (n=3) and foot drop (n=1).

3. The buttock is a difficult anatomical location to treat soft tissue sarcoma, because it allows involvement of different muscle layers with extension. Imaging test are very important for determining the exact location (Table 2) of the tumour in all patients [11].

4. The most frequent histopathological types of these sarcomas (Table 3) were liposarcoma (n=19), leiomyosarcoma (n=13) and synovial sarcoma (n=9). The tumours range from 2 to 35 cm in diameter (average 12 cm).

5. Distant metastases were observed in thirty-five patients. The most frequents sites of metastasis were lung (n=29), bone (n=6), subcutaneous (n=4), liver (n=2), intraperitoneal (n=2) and adrenal gland (n=1) [12].

6. The average time to first distant metastasis was eight months. At the time of the diagnosis our patient presented lung and adrenal metastasis.

In conclusion, primary buttock soft tissue sarcomas in adults are uncommon entities. Although it is uncommon that sciatica and tumours relate in their diagnosis (0'7%) we should consider it very important to take into account that good history and physical examination can give us a lot of information about diagnosis and it is our duty to know all the warning signs or "red flags".

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