

Case Report

Psoriasis vulgaris of the skin caused a L3-L4 lumbar epidural spinal abscess

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ABSTRACT

Background: In a 31-year-old male, psoriasis vulgaris (PV) of the skin caused paraparesis attributed to a L3-L4 epidural spinal abscess that required emergent surgical decompression.

Case Description: A 31-year-old male presented with lower back pain and cauda equina compression attributed to a magnetic resonance-documented L34 enhancing lesion consistent with a spinal epidural abscess (SEA). The skin over the L3-L4 level revealed severe PV that proved to be the likely etiology of the right-sided paraspinal muscle abscess, infected right L3-L4 facet joint, and SEA. At surgery, the foci of infection were excised/decompressed, and cultures grew methicillin-susceptible *Staphylococcus aureus*. Following surgery, the patient was improved and was treated with appropriate antibiotic therapy.

Conclusion: PV caused a L3-L4 epidural spinal abscess and cauda equina compression in a 31-year-old male who was successfully treated with operative decompression and appropriate antibiotic management.

Keywords: Epidural abscess, Facet joint arthritis, Methicillin-susceptible *Staphylococcus aureus*, Paraspinal muscle abscess, Psoriasis vulgaris

INTRODUCTION

Psoriasis vulgaris (PV) affects 85–90% of patients with psoriasis; it is the most common phenotype of atopic dermatitis. PV typically involves extensor surfaces of the elbows, knees, sacral region, and scalp. Here, a 31-year-old male with PV over the L3-L4 lumbar level presented with a cauda equina syndrome attributed to a L3-L4 spinal epidural abscess (SEA).

CASE DESCRIPTION

A 31-year-old male presented with one week of lower back pain, fever, bilateral lower extremity numbness, and one day of paraplegia with loss of sphincter function (i.e., cauda equina syndrome). The lumbar magnetic resonance (MR) documented an enhancing right paraspinal abscess that extended into the right L3-L4 facet joint and spinal epidural compartment^[1]

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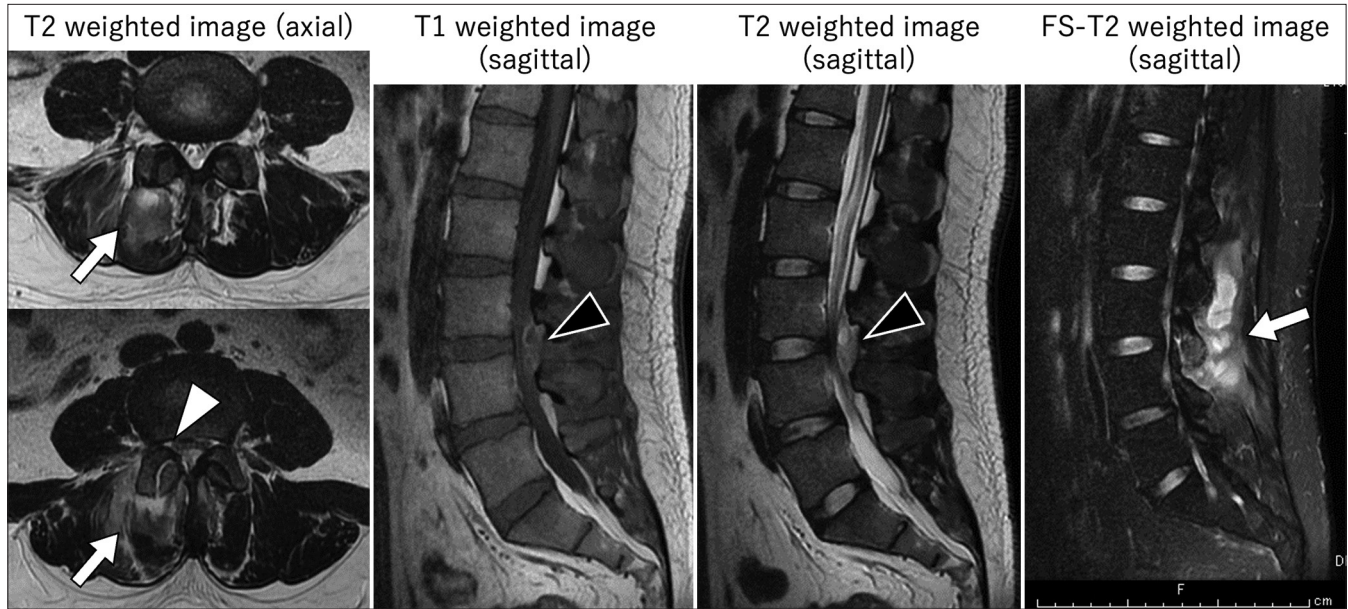


Figure 1: Lumbar magnetic resonance imaging showed an abnormal intensity lesion in the bilateral paraspinal muscle, especially at the right side (white arrow), in the L3/4 right facet joint (white arrow head), and epidural space (black narrow).

[Figure 1]. The patient's white blood cell count was elevated (i.e., 12770, neutrophils 81.1%), as was his C-reactive protein (11.57); interestingly, the blood cultures were negative.

Surgery

The incision for the laminectomy extended directly through the large erythematous skin lesion containing a small exudate (i.e., later diagnosed as PV) [Figure 2]. Evidence of infection involved the right paraspinal muscles right L3-L4 facet joint, and extended into the epidural compartment (i.e., abscess). Cultures confirmed a methicillin-susceptible *Staphylococcus aureus* (MSSA) organism that was treated with four weeks of intravenous minomycin and followed by oral minomycin for two weeks (i.e., until the C-reactive protein level normalized [0.25]).

Postoperative course

Postoperatively, the patient's lower extremity motor function improved to nearly normal (i.e., 4/5 level). Two weeks postoperatively, the lumbar MR showed no residual L3-L4 epidural abscess. Six months after surgery, the patient was neurologically intact [Table 1].

DISCUSSION

Few studies report SEAs attributed to infection [Table 2].^[2,3,5,7] Park *et al.* cited a case in which the patient



Figure 2: We found a skin lesion on the patient's lower back. It was a large erythema with a small amount of exudate. There was no apparent fistula, but an inflammatory state was suspected. This lesion was diagnosed as psoriasis vulgaris by a dermatologist, which was severe but improved with topical medication.

had an epidural abscess with extension into the paraspinal muscles.^[6] Unnikrishnan *et al.* reported an elderly woman with diabetes and psoas/paraspinal muscle abscesses secondary to a urinary infection.^[8] Kiyamaz and Demir reported a child with very large paraspinal and epidural abscesses attributed to a localized streptococcal skin infection of the neck.^[4] Here, a 31-year-old male with a localized L3-L4 level PV skin lesion developed an infection involving the right paraspinal muscles, the right L34 facet,

Table 1: Symptom changes from preoperative to postoperative.

	The manual muscle test score (Right/Left)							The visual analog scale score	
	iliopsoas	quadriceps	Hamstrings	anterior tibialis	extensor hallucis longus	flexor hallucis longus	gastrocnemius	lumbago	leg numbness
Preoperative	3-3	3-3	2-/2-	2-/2-	2-/2-	2-/2-	2-/2-	25	40
2 Weeks postoperative	4-4	4-4	2+/2+	2+/2+	2+/2+	2+/2+	2+/2+		
6 Months postoperative	5-5	5-5	5-5	5-5	5-5	5-5	5-5	10	0

Table 2: A summary of the literatures reporting on paraspinal muscle abscess, spinal epidural abscess, and facet joint arthritis.

Reference	Site of infection	Level	Age/Sex	Route of infection	Causative bacteria	Therapy
Kiyamaz N, et al. 2005	SEA	C2-3	10/F	-	Streptococcus anginosus	Laminectomy, Drainage, Antibiotic therapy
Park MS, et al. 2007	PMA, SEA, FJA	L4-L5	50/M	-	Staphylococcus aureus	Laminectomy, Drainage, Antibiotic therapy
Hassan FOA, et al. 2008	Pyomyositis	T5-S3	13/M	-	MSSA	Drainage, Antibiotic therapy
Mitchell LA, et al. 2009	PMA, SEA	-	13/-	Skin infection	Staphylococcus aureus	-
Rhyu KW, et al. 2011	PMA, SEA, FJA	L2-L5	45/M	-	Staphylococcus	Laminectomy, Drainage, Antibiotic therapy
Boulyana M, et al. 2014	PMA, SEA	L4-S1	13/M	-	MSSA	Drainage, Antibiotic therapy
Chu A, et al. 2015	PMA, SEA	T1-S2	25/M	-	MSSA	Laminectomy, Drainage, Antibiotic therapy
Bureta C, et al. 2018	PMA, SEA, FJA	T12-L4	68/F	Urinary infection	Streptococcus agalactiae	Laminectomy, Drainage, Antibiotic therapy
Unnikrishnan D, et al. 2018	PMA	-	73/F	Urinary infection	Streptococcus agalactiae	Drainage, Antibiotic therapy
O'Donnell R, et al. 2019	PMA	L1-L5	2/F	-	MSSA	Drainage, Antibiotic therapy
Zheng Z, et al. 2019	PMA	L5-S3	30/M	Pharyngeal infection	Streptococcus pyogenes	Antibiotic therapy
This case	PMA, SEA, FJA	L3-L4	31/M	Skin infection (PV)	MSSA	Laminectomy, Drainage, Antibiotic therapy

PMA: paraspinal muscle abscess SEA: spinal epidural abscess FJA: facet joint arthritis, MSSA: Methicillin-susceptible Staphylococcus aureus

and spinal epidural compartment (i.e., abscess) that required operative decompression/resection and appropriate follow-up antibiotic therapy for MSSA.

CONCLUSION

PV caused a L3-L4 epidural spinal abscess that was quickly diagnosed, decompressed, and treated with appropriate antibiotic therapy.

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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