AUCTORES
Globalize your Research

International Journal of Clinical Case Reports and Reviews
Federica Valente *

Open Access

Case Report

Spondylodiscitis Complicated by Extended Epidural Collection: A Case Report of Rapid Spontaneous Resolution

Federica Valente [1]*, Alessandro Tancioni [2], Federico Longhitano [3], Alberto Riccardo Bona [3], Tommaso Alfiero [3], Marco Meloni [3], Enrico Aimar [3], Flavio Tancioni [3]

[I]RCCS San Raffaele Institute, Department of Neurosurgery and Gamma Knife Radiosurgery, Milan 20132, Italy.

[2]Research Unit of Orthopaedic and Trauma Surgery, Department of Medicine and Surgery, Università Campus Bio-Medico di Roma, Via Alvaro del Portillo, 21, Roma 00128, Italy.

[3]Neurosurgery Unit, ICCS Città Studi, Milan, Italy.

***Corresponding Author:** Federica Valente, IRCCS San Raffaele Institute, Department of Neurosurgery and Gamma Knife Radiosurgery, Milan 20132, Italy.

Received Date: May 23, 2025 | **Accepted Date:** September 19, 2025 | **Published Date:** September 30, 2025

Citation: Federica Valente, Alessandro Tancioni, Federico Longhitano, Alberto R. Bona, Tommaso Alfiero, et al, (2025), Spondylodiscitis Complicated by Extended Epidural Collection: A Case Report of Rapid Spontaneous Resolution, *International Journal of Clinical Case Reports and Reviews*, 30(3); **DOI:10.31579/2690-4861/839**

Abstract:

A case of a 76-year-old man with severe back pain causing limitation of lower limbs movements, without neurological symptoms. The MRI showed an early on-stage spondylodiscitis with massive posterior epidural collection L2-L3.

He was treated conservatively, without need of surgical treatment, because the subsequent MRI performed displayed a rapid spontaneous resolution of the collection.

Key words: alpha coma; covid-19; electroencephalography (eeg); huntington's disease; post-hypoxic encephalopathy

Introduction

Spondylodiscitis is an infection of the intervertebral disc and adjacent vertebrae.

The infectious agent, usually, reaches the spine from a distant site through hematogenous circulation or, in smaller extent, from direct inoculation through skin continuity solutions [1].

Usually, back pain is the first symptom developed with or without neurological deficits. Also, there could be systemic inflammatory signs such as fever, elevated CRP levels, and leukocytosis [2].

In severe cases, it may progress locally, causing destruction and deformity of the spinal segments involved or globally, leading to systemic inflammatory response syndrome (SIRS) or septic status [3].

In late stages, the disease can be complicated by spread into the epidural space of infectious material, organized in a spinal epidural abscess (SEA). This is a rare but life-threatening complication with a mortality rate of about 5–16% worldwide [4].

Case

A 76-year-old male patient, with no relevant medical conditions, came to our attention complaining a progressively severe high and low-back pain for 15 days with no sphincteric disorders.

At medical examination he had no neurological deficits, only important limitation of lower limbs movements caused by pain exacerbation, in fact he was already forced to bed rest for at least a week at home. A single episode of high temperature detection was referred, a total spine MRI without iv contrast, conducted in another facility just a few days before, was available (Figure.1).

It showed a formation in the posterior epidural space at L2-L3 level in continuity with a less visible one localized in the anterior epidural space below, at L3-L4 level. Here, the adjacent endplates (L3, L4) showed significant high signal, caused by bone marrow edema without further signs of vertebral involvement.

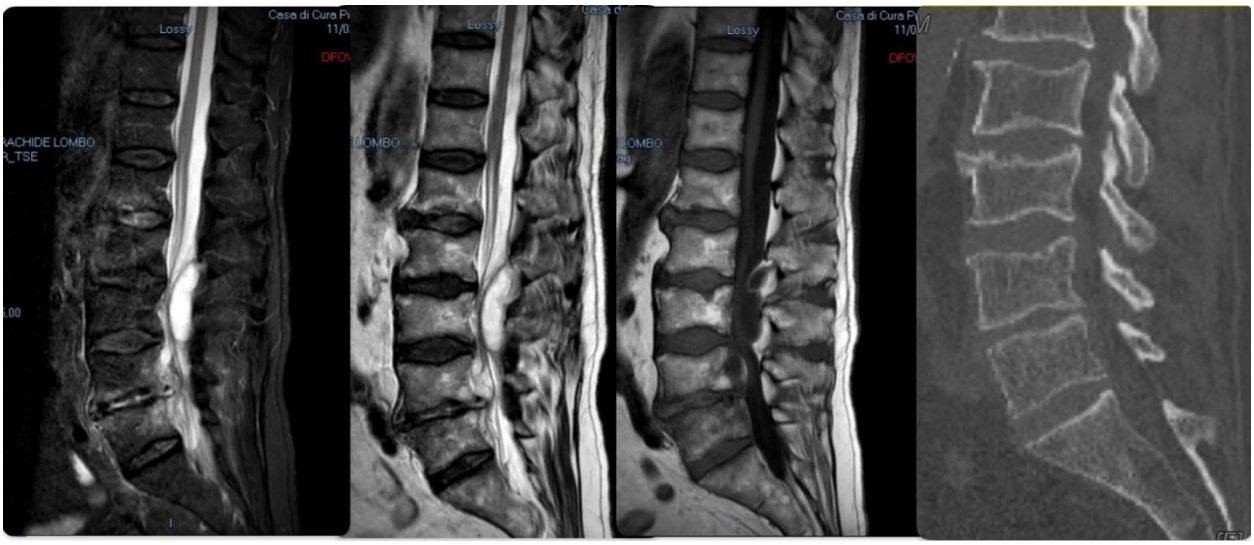

Figure 1: A. MRI FLAIR sequence- high signal massive posterior epidural formation L2-L3 with visible outlines, high signal smaller formation in the anterior epidural space L3-L4 with more blurred outlines.
B. MRI T2 sequence- Confirmation of the two epidural collections (hyperintense signal). High signal of lumbar vertebral plates.
C. MRI T1 sequence- recognizable anterior epidural formation, barely visible the upper side of the posterior formation (hypointense signal). High signal of lumbar vertebral plates, especially L3.

The clinical symptoms associated with these radiological features were all suggestive for a case of spondylodiscitis, despite the lack of an impressive bone implication.

According to spondylodiscitis guidelines (IDSA-2015)5 and EANS Spine Section Delphi consensus recommendations (2024)3, at the admission in our department the patient underwent chest X-ray, which resulted normal, CT total spine scan, that was negative for vertebral collapse or massive endplates erosion (Figure.1). Blood and urine cultures were taken and came out as negative after a standard period of 5 and 2 days, respectively.

Laboratory examinations displayed a slightly upon range value of WBCC (10,5 10^9/L) and elevated CRP levels (81,3 mg/L).

We took another full spine MRI, this time using iv contrast, exactly one week later the first outpatient MRI, which showed an unexpected decrease in size of the entire SEA (Figure.2)

Especially, the posterior L2-L3 collection appeared barely visible in the new study.

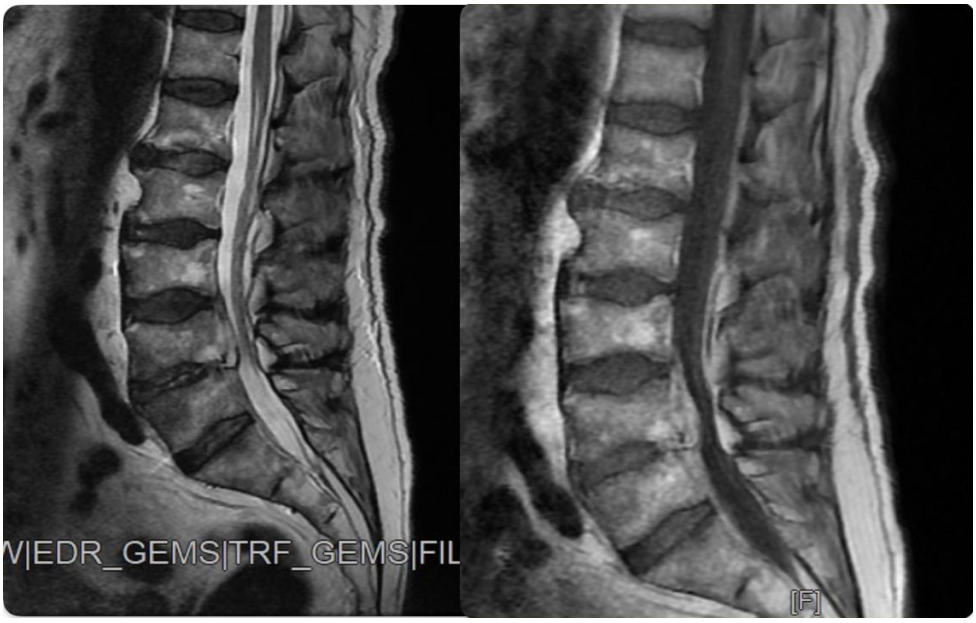

Figure 2: A. MRI T2 sequence, no iv contrast- Decrease in size of both the epidural collection, especially the posterior one.
B. MRI after iv contrast-enhancement of the two small anterior and posterior epidural collections. Increased high signal of vertebral plates

Taking into consideration the spontaneous resolution of the collection and the patient's overall good-health status, we decided to pursue a conservative treatment with iv medications for pain-control, complete bed rest and wait for blood and urine cultures results to choose the most suitable antibiotic therapy.

During the hospitalization, on the clinical point of view, the patient referred important improvement of the back pain and lower limbs movements became possible with no more limitations due to pain exacerbation.

Therefore, the patient started gently mobilization using spinal orthoses and progressively was able to move on his own with walker support.

When blood and urine cultures came out as negative, according to infectious disease specialist's prescription, he began a broad-spectrum iv antibiotic therapy initially with Daptomycin and Ceftriaxone, the latter then substituted with piperacillin/tazobactam, for an overall period of two weeks.

After three weeks from the first MRI taken in our hospital and two weeks from the beginning of the antibiotic therapy, another MRI with iv contrast was performed and displayed a further slight reduction of the abscess, but a greater involvement of intervertebral discs and endplates, as predictable as a spondylodiscitis (Figure. 3).

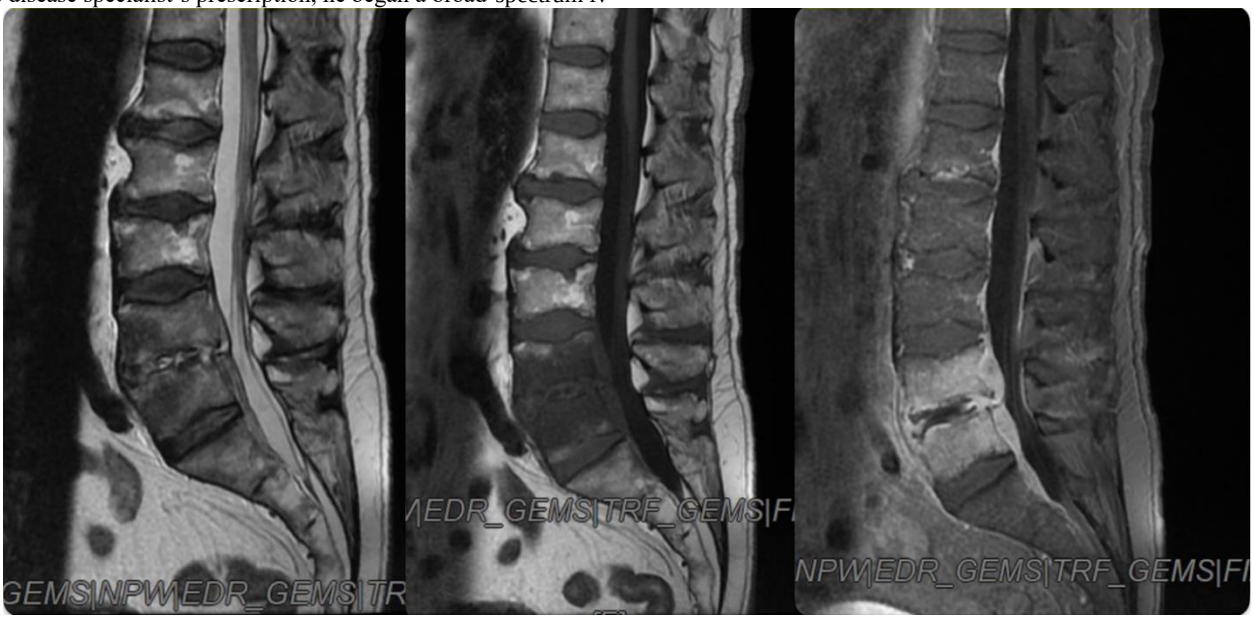

Figure 3: A. MRI T2 sequence, no iv contrast- minimal hyperintense signal in the upper side of the previous posterior epidural collection at L2-L3 level and anterior epidural collection L3.
B. MRI T1 sequence, no iv contrast- minimal hypointense signal of anterior epidural collection at L3 and L4 level.
C. MRI After contrast- No signs of the posterior epidural collection, enhancement of the anterior epidural collection, increased high signal of L4 and L5 vertebral bodies

At this point we could switch the iv-antibiotic therapy to an oral one with doxycycline and levofloxacin, following specialist recommendation, and discharge the patient scheduling radiological and clinical controls.

Discussion

Go Kubota et al.6 described a case of lumbar SEA almost complete resolution one week after surgical treatment with percutaneous posterior pedicles fixation without decompression.

The group considered responsible for this unexpected result two possible mechanisms:

First, the stabilization of the infected disc might be advantageous in controlling the spread of the infection, preserving the adjacent vertebrae from collapse/destruction.

Second, the abscess, located ventrally in the epidural space, might be in continuity with a primitive abscess in the infected disc space, where the SEA could have been partially suctioned because of intradiscal pressure decrease after surgical fixation.

Specifically, our case was a recent onset spondylodiscitis, as testified by absence of radiological signs of vertebral collapse or endplates massive erosion (Fig.1), cultures negativity, lack of fever and midly high levels of inflammatory lab indicators, all suggestive for a low-load infection and recent outbreak of clinical symptoms.

Therefore, it is hypothetically possible that a complete bed-immobilization only, for an overall period of 10/15 days, considering the time in our department plus 7 days before hospitalization, could somehow control the infection spread and improve the clinical conditions.

Moreover, this unexpected result could also depend on the unconventional presence of a spinal epidural abscess in this early stage of spondylodiscitis which reclaims an unconventional strategy.

Eventually, a recent article published by AO spine guest blog described a case with some characteristics overlapping with ours7. It was a recent onset spondylodiscitis also complicated by epidural collection, although located only in the anterior epidural space and way smaller if compared with our images.

The diagnostic workup and the experts 'opinion find an agreement with our management.

They also chose a conservative approach resulting in resolution of the existing epidural collection.

Conclusions

In conclusion, it is possible to consider different types of treatment in case of spondylodiscitis complicated by epidural abscess.

We expose a case of an early-stage spondylodiscitis associated with posterior epidural abscess without neurological deficits in a not life-

threatening situation, where a conservative approach was chosen because of the collection spontaneous regression.

The mechanisms responsible for this phenomenon are uncertain at the moment.

Hypothetically, a few weeks bed immobilization could stop the infection progression and help the abscess resorption.

Likewise, an epidural collection in this early stage of bone involvement could be not completely organized yet, so that it could be a positive prognostic factor for a spontaneous regression.

Therefore, this report proves that the best therapeutic strategy must be tailored to the patient specific situation, especially if the pathological presentation is uncommon.

References

1. Fang, A., Hu, S. S., Endres, N. & Bradford, D. S. Risk Factors for Infection After Spinal Surgery. SPINE vol. 30.
2. Lemaignen, A. et al. (2017). Characteristics of and risk factors for severe neurological deficit in patients with pyogenic vertebral osteomyelitis. Medicine (United States) 96,
3. Kramer, A. et al. (2025).Diagnosis and management of de novo non-specific spinal infections: European Association of Neurosurgical Societies (EANS) Spine Section Delphi consensus recommendations. Brain and Spine 5.
4. Piccolo, C. L. et al. (2024). Spondylodiscitis and Its Mimickers: A Pictorial Review. Biomedicines vol. 12 Preprint
5. Berbari, E. F. et al. (2015). Infectious Diseases Society of America (IDSA) Clinical Practice Guidelines for the Diagnosis and Treatment of Native Vertebral Osteomyelitis in Adults. Clinical Infectious Diseases vol. 61 e26–e46
6. Kubota, G. et al. (2022).Unexpectedly rapid decrease in the size of a spinal epidural abscess after percutaneous posterior pedicle screw fixation without decompression surgery: a case report. Spinal Cord Ser Cases 8,
7. Dalton, J., Schroeder, G. & Dandurand, C. (2025). Controversies in treating complex spinal infections: case studies and expert insight. AO Spine Guest Blog.

DOI:10.31579/2690-4861/839