

# Picked Up by a Wasp? Watch Out the Spine! A Case of Multifocal Pyogenic Spondylodiscitis

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## Abstract

**Introduction:** spondylodiscitis represents 3-5% of all cases of osteomyelitis. *S. aureus* is isolated in 50% of cases. Mortality ranges is 0-11%. Disability may occur. Diagnosis is often a challenge. Lumbar spine is preferentially affected with multifocal involvement in 4% cases. Septic shock mortality rate is high (22-76%). Purpose: to describe a case of septic shock due to pyogenic multifocal spondylodiscitis successfully-treated in Intensive Care Unit (ICU). Methods: 63-year-old woman presented in Emergency Department complaining 7 days back pain, weakness and diarrhea. Clinical setting suggested intra-abdominal infection. Rapid hemodynamic derangement required ICU transfer to treat septic shock and multiple organ failure. Cerebrospinal fluid (CSF) analysis showed normal count cells and hyperproteinorachia. Methicillin-sensitive *S. aureus* (MSSA) was isolated from blood cultures and in a very low charge from CSF. In addition *C. difficile* toxin was found. Vertebral spine Magnetic Resonance Imaging showed spondylodiscitis in multiples vertebral bodies and intervertebral disks, paravertebral and Psoas muscles abscesses. Further anamnestic information allowed identification of recent wrist wasp sting (infected by the same MSSA). In ICU, patient underwent *C. albicans fungemia* and *P. aeruginosa* sepsis. She was treated with antibiotics and we performed advanced-cardiovascular-support, protective-mechanicalventilation and continuous-veno-venous-hemofiltration. Results: after 79 days, patient was transferred to rehabilitation ward and then back home. Conclusions: despite previous delay in sepsis recognition and its underlying cause, early application of intensive support and close adherence to Survival Sepsis Campaign treatment guidelines were critical issues for the survival of this unusual spondylodiscitis case.

**Keywords:** Spondylodiscitis; Osteomyelitis; Mortality; Multifocal

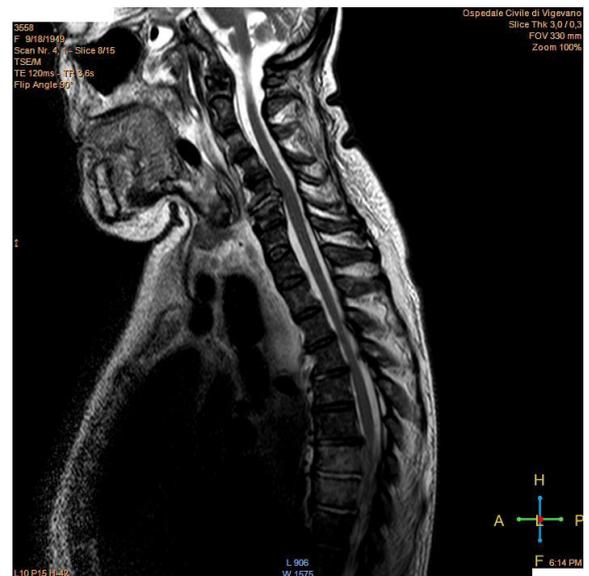
## Introduction

Spondylodiscitis is an uncommon infection that represents 3-5% of all cases of osteomyelitis [1,2]. The incidence seems to be increasing in the last years as a result of higher life expectancy of older patients with chronic debilitating diseases. Spondylodiscitis is in most cases a hematogenous infection. Staphylococcus aureus is the most frequent microorganism isolated, accounting about 50% of the all cases [3]. Mortality ranges is from 0 to 11% [2]. In a significant number of cases, recrudescence, residual neurological defects or persistent pain may occur. Diagnosis is difficult and often delayed or missed due to rarity of disease and high frequency of low back pain in general population [2]. Hematogenous pyogenic spondylodiscitis affects preferentially the lumbar spine. Multifocal involvement occurs in 4% of cases [4,5].

**Purpose:** the objectives of this report are to describe a case of a multifocal pyogenic spondylodiscitis successfully treated in Intensive Care Unit (ICU) and to review physician attempt to this rare infection.

## Clinical Case

We describe a case of 63-year-old woman living in a farm situated in Lomellina's countryside, complaining 7 days back pain, weakness and diarrhea. Clinical setting suggested intra-abdominal infection. Rapid hemodynamic derangement required ICU transfer to treat septic shock and multiple organ failure. Cerebrospinal fluid (CSF) analysis showed normal count cells and hyperproteinorachia (Table 1). Methicillin-sensitive Staphylococcus aureus (MSSA) was isolated from blood cultures and, later, in a very low charge from CSF. In addition *Clostridium difficile* toxin was found. There was no history of immunodeficiency or previous antibiotics therapy. Vertebral spine Magnetic Resonance Imaging (MRI) showed spondylodiscitis in multiples vertebral bodies and intervertebral discs, paravertebral and Psoas muscles abscesses (Figures 1-6). Further anamnestic information allowed identification of recent wrist wasp sting (infected by MSSA). When questioned, the daughter referred that her mother was picked



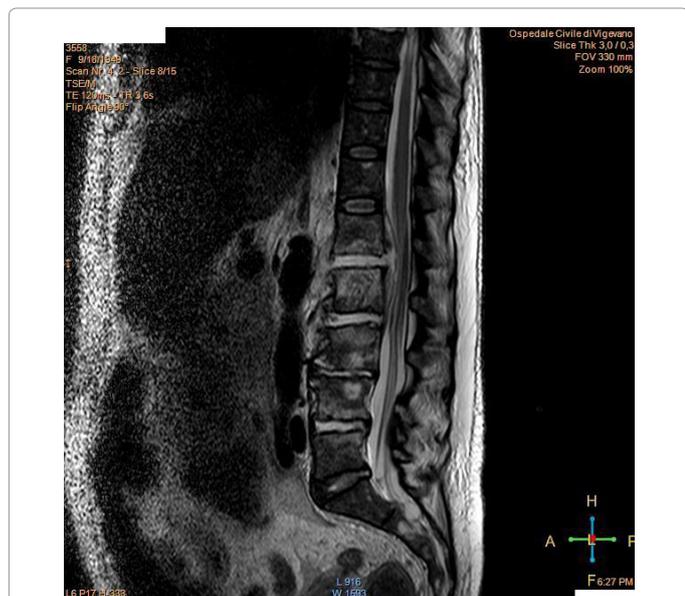
**Figure 1:** MRI sagittal cut showing hyperintense and inhomogeneous signal in cervical and dorsal tracts during empiric antibiotic therapy.

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**Figure 2:** MRI sagittal cut showing hyperintense and inhomogeneous signal of lumbar tract during empiric antibiotic therapy.

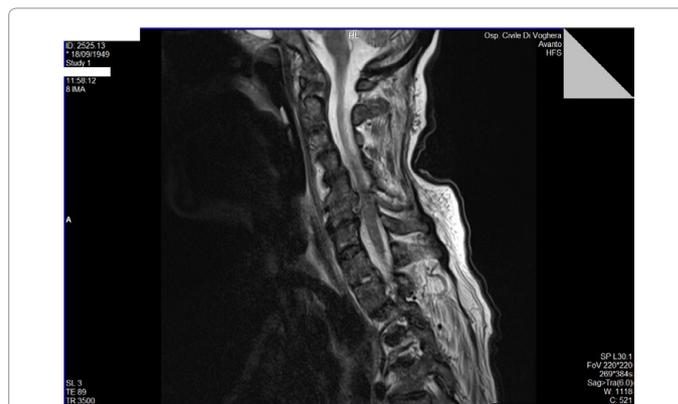


**Figure 3:** MRI sagittal cut showing hyperintense and inhomogeneous signal in lumbar tract and Psoas Abscess during empiric antibiotic therapy.

up by a wasp few days earlier the appearance of the back pain. In ICU, patient underwent *Candida albicans* fungemia and *Pseudomonas aeruginosa* sepsis. She was treated with antibiotics (Table 2) and we performed advanced cardiovascular support, protective mechanical ventilation and continuous veno-venous hemofiltration. After 79 days hospitalization in ICU, the patient was transferred to neurological rehabilitation in spontaneous breathing, normal renal function without signs of neurological damage. Then she went back home.

## Discussion

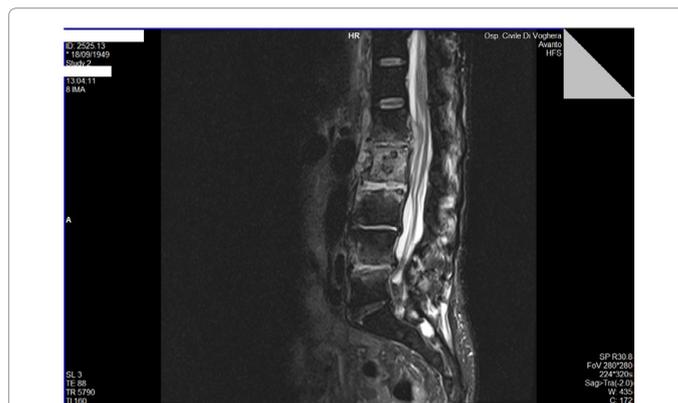
We present a rare case of multifocal pyogenic spondylodiscitis treated in our hospital in ICU. There are two key-points about this



**Figure 4:** MRI sagittal cut showing hyperintense and inhomogeneous signal around C7 after 3 weeks specific antibiotic therapy antiobigram-guided.



**Figure 5:** MRI sagittal cut showing hyperintense and inhomogeneous signal around D7 - D8 with initial medullary compression associated after 3 weeks specific antibiotic therapy antiobigram-guided.



**Figure 6:** MRI sagittal cut showing hyperintense and inhomogeneous signal of the whole body of L2 and intersomatic discs after 3 weeks specific antibiotic therapy antiobigram-guided.

clinical case we want to discuss: firstly, the CSF analysis showed normal count cells and hyperproteinorachia. Only during the following days we documented extremely slow growth associated to a very low charge of Methicillin-sensitive *Staphylococcus aureus*. The interpretation of laboratory findings might be confused and misunderstood; This liquor findings are common in different situations such as contaminated fluid and autoimmune illness. The second mayor point is the importance to

CSF 13/07/2013			CSF 19/07/2013			CSF 13/08/2013 *		
CSF Features	VALUE	RANGE	CSF Features	VALUE	RANGE	CSF Features	VALUE	RANGE
Aspect	Hematic	Clear	Aspect	Turbid	Clear	Aspect	Clear	Clear
Color	Opalescent	Colorless	Color	Dark yellow	Colorless	Color	Colorless	Colorless
WBC	1 / mmc	< 5	WBC	10 / mmc	< 5	WBC	1 / mmc	< 5
Proteins	1,83 g/l	0,15 - 0,45	Proteins	11,89 g/l	0,15 - 0,45	Proteins	2,07 g/l	0,15 - 0,45
Glucose	72 mg/dl	40 - 70	Glucose	19 mg/dl	40 - 70	Glucose	58 mg/dl	40 - 70
Microscope	Red Cells ++		Microscope	Red Cells ++		Microscope	Negative	
Colture	Negative?*		Colture	S. aureus		Colture	Negative	

\* Very slow and extremely late growth in soup culture  
 \* Intrathecal injection vancomycin 20 mg not repeated due to the CSF exam result

**Table 1:** Cerebrospinal fluid findings at Day 1, day 6 and day 30. Laboratory findings show very misunderstandable results.

ICU Infections			WILD Infections	
		0	CIPROFLOXACIN CEFTRIAXONE	Empiric (administered by other hospital)
		2		
		5	METRONIDAZOLE	<i>C. difficile</i> toxin +
MEROPENEM	<i>Pseudomonas aeruginosa</i> (blood colture)	10	LINEZOLID MEROPENEM	Clinical signs of meningism
		20	CEFAZOLIN	MSSA in blood and CSF coltures
COLISTIN (aerosol)	Multiresistant <i>Pseudomonas aeruginosa</i> (lung)	30	VANCOMYCIN (intrathecal)	Persistent MSSA in CSF
ANIDULAFUNGIN	<i>Candida albicans</i> (blood colture)	60	BACTRIM MINOCYCLINE	MSSA (until hospital discharge)
ICU days hospitalisation				

**Table 2:** Antibiotic therapy during ICU hospitalisation.

discover the main entry door of infection source. The wound due to wasp puncture was contaminated by the same MSSA. In conclusion, despite the delay in recognition of underlying causes of sepsis, early application of intensive support and close adherence to Survival Sepsis Campaign treatment guidelines were critical issues for the survival of this unusual spondylodiscitis case.

**References**

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