

## CASE REPORT

# Spondylodiscitis due to *Sallmonela* in an Immunocompetent Patient

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**S**almonella is a gram-negative bacillus that penetrates in human from contaminated food or water. *Sallmonela* spondylodiscitis is a rare condition occur secondary to hematogenous spread after bacteremia episode. We presented a successful treatment with Levofloxacin in a 26 years old immunocompetent male with a septic form of *sallmonelosis* complicated with lumbar spondylodiscitis without surgery. He was treated with intravenous Levofloxacin for three weeks and was discharged from the hospital with oral Levofloxacin for more than two months. Clinical and laboratory evaluation two months after oral treatment resulted normal. **KEY WORDS:** SALLMONELA, SPONDYLODISCITIS.

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## 1. INTRODUCTION

Salmonella is a non-spore-forming gram-negative bacillus of the family Enterobacteriaceae. In most cases humans ingest the organism from contaminated food or water and small bowel becomes its habitat. Salmonella can be either quiescent in an asymptomatic carrier state or manifest as gastroenteritis, typhoid fever, or bacteremia (1, 2). Typhoid fever is a systemic infectious disease caused by the dissemination of this organism arising from the gastrointestinal tract and is commonly characterized by fever and abdominal pain (3). Salmonella spondylodiscitis is a rare condition that is more prevalent in patients with sickle cell disease or immunosuppression; however, it can also be found in immunocompetent patients, too. Salmonella spondylodiscitis thought to occur secondary to hematogenous spread after an episode of bacteremia.

## 2. CASE REPORT

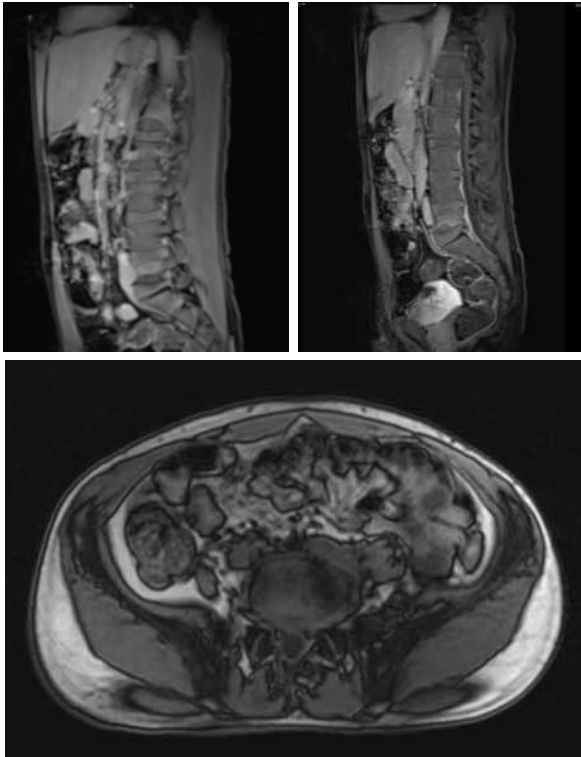
A 26 year old male was admitted in Service of Infectious Diseases with a diagnosis of febrile condition with lumbago and hepato-lienal syndrome. His complaints were: temperature 39-40 degrees continua, strong lumbar pain, unable to walk and move. Symptoms were start five days ago with fever, lumbago and some diarrhea episodes. He

was treated in a regional hospital for 3 days, but the situation wasn't improving. He worked as emigrant in Greece from arrived two weeks ago healthy.

Objective examination showed pale face, hepato-splenomegaly and unable to move feet and lumbar region because of terrible pain. A complete blood count revealed hemoglobin of 13g/dL, white blood cell count (WBC) of 13,600 cells/mm<sup>3</sup> (60% neutrophils and 40% lymphocytes) and platelet count of 250,000 cells/mm<sup>3</sup>, Erythrocyte Sedimentation Rate (ERS) 45mm/h. C-Reactive Protein (CRP) was 12 mg/dL. Blood sugar and other blood chemistry tests were normal. Chest radiography was normal. Chest sonography examination were normal. In two cultures of blood were seen gram negative bacteria, *Sallmonella* Group B. Urine culture were negative. Results in first Widal test were: TO1:160, TH 1: 320. Other serological tests: Wright, Wail-Felix, HIV, ELISA Brucellosis IgM, IgG were negative. Gamma-interferon test and PPD

Year, country	Sex, age (years)	Underlying disease/ predisposing condition	Duration of illness	Infection site	Treatment		Outcome
					Medication	Surgery	
1962, Nigeria <sup>(9)</sup>	M, 16	Sickle cell anemia	3 weeks	L4-5	Penicillin and streptomycin for 6 weeks	No	Survived without neurological sequelae
1963, England <sup>(9)</sup>	F, 45	No, consumption of raw oysters	2 months	L1-2	Chloramphenicol for 2 months	Laminectomy	Survived without neurological sequelae
1981, England <sup>(9)</sup>	F, 12	No	3 months	T11-12	Chloramphenicol and amoxicillin for 2 months	No	Survived without neurological sequelae
1999, South Africa <sup>(9)</sup>	F, 12	No	2 days	L5-S1	Ampicillin for 6 months	No	Survived without neurological sequelae
1999, South Africa <sup>(9)</sup>	M, 13	No	4 weeks	L4-5	Ampicillin for 4 weeks	No	Survived without neurological sequelae
2004, Mali <sup>(11)</sup>	M, 50	No	2 weeks	L2-3, psoas abscess	Ceftriaxone and ciprofloxacin for 16 weeks	No	Survived without neurological sequelae
2004, India <sup>(13)</sup>	F, 38	No	3 months	L4-5	Ceftriaxone for 4 weeks	Laminectomy	Survived without neurological sequelae
2006, Hong Kong <sup>(3)</sup>	F, 25	No	3 weeks	L4-5	Ampicillin for 6 weeks	No	Survived without neurological sequelae
2008, Jordan <sup>(1)</sup>	M, 56	Diabetes	3 months	T3-4, epidural abscess	Ceftriaxone for 6 weeks	Laminectomy and debridement	Survived with mild neurological sequelae
2008, Thailand <sup>*</sup>	M, 57	Diabetes, consumption of raw vegetables	1 month	T11-12, epidural abscess	Ciprofloxacin for 3 weeks, ciprofloxacin and cotrimoxazole for 6 months	Laminectomy, discectomy and debridement	Survived with mild neurological sequelae

TABLE 1. Results of searching of literature about Spondylodiscitis (diagnosis and treatments)



**FIGURE 1.** MRI Sagittal and Axial View L5-S1 intervertebral disc presented small hyper signals and irregular margins, associated with an oedema of the L5 vertebral body and a slight epidural attenuation.

were negative, too. Electrophoresis of proteins and hemoglobin were normal. MRI: In abdominal images were seen hepatomegaly and splenomegaly. In vertebral column the L5-S1 intervertebral disc presented small hypersignals and irregular margins, associated with an oedema of the L5 vertebral body and a slight epidural attenuation (Figure 1). Widal test repeated after a week were: TO 1:320, TH 1; 640. We started a complex treatment with Levofloxacin, Flagyl, Amikacine i/v and Dexametazon. Temperature returned normal on the sixth day and pain relief in fifteenth day. The patient gradually improved after three weeks of intravenous Levofloxacin (400 mg every 12 hours). Then the antimicrobial was changed to oral Levofoxacin 750 mg daily for two months more. Clinical evaluation two months after oral treatment resulted normal. WBC was 5900 cells/mm<sup>3</sup>, CRP was 0.8 mg/dL and ESR was 25 mm/h.

### 3. DISCUSSION

Extraintestinal infections are the rare complications of *Salmonella* bacteremia, accounting for 5-10% of all patient (4, 5). *Salmonella* osteomyelitis has traditionally been associated with

patients following sickle cell crisis where intestinal infarctions due to sickling permits the passage of ordinary salmonella gut flora organisms into the blood stream, and then to bone (6). Our case was without any haemoglobinopathy or immunosuppression. According to (7) *Salmonella* spondylodiscitis accounts for less than 0.5% of all bone infections, it causes significant difficulties in management and can be associated with increased morbidity and mortality. The major clinical manifestations and laboratory findings include fever, back pain, leukocytosis and elevated ESR and CRP as in our case.

Cases are thought to occur secondary to hematogenous spread after an episode of bacteremia (1, 2, 4, 7) as in our patient. Blood culture was positive in 48% of cases (4).

According to (5) no patients in the literature can recognize a history of diarrhea prior to their present illness, probably due to a long incubation period of the disease and the ability of *Salmonella* Typhi to penetrate the intestinal wall without causing the diarrheal symptoms, but in (5) diarrhea was present only in 16% of cases, as in our case with a septic form of the disease. Most patients in the literature had symptoms of illness of less than 3 months, with the range from two days to three months. The mortality of spondylitis caused by *Salmonella* spp. or pyogenic bacteria in other studies varied between 5% and 40% (4). In our case the patient had high temperature three days before started pain in lumbar region. MRI ten days after beginning complains, showed irregular margin associated with an oedema of the L5 vertebral body and hypersignals in L5-S1 intervertebral disc, but without epidural abscess and surgery intervention as in (8, 11). In osteomyelitis patients without sickle-cell anemia the infection is attributed to *Salmonella* in only 0.5% of the cases,

one forth of which involves the spinal column (9). The most common infection sites of typhoid spondylitis were the lumbar region (5) and our case was one of them. Treatment applied with i/v Levofloxacin for three weeks and more than two months with oral Levofloxacin resulted successful. *Salmonella* is sensitive to Ciprofloxacin, Ceftriaxon, Levofloxacin (2, 8, 10, 11, 12). Summary of ten patients with Typhoid spondylitis from English literature showed in Table 1 (3).

### 4. CONCLUSION

We presented a successful treatment with Levofloxacin in a 26 years old immunocompetent male with a septic form of salmonellosis complicated with lumbar spondylodiscitis without surgery intervention.

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