

# Septic Emboli with an epidural abscess

A Uysal, B Datti, M Tapolyai, M Boktor, C Lang

## Citation

A Uysal, B Datti, M Tapolyai, M Boktor, C Lang. *Septic Emboli with an epidural abscess*. The Internet Journal of Pulmonary Medicine. 2006 Volume 8 Number 1.

## Abstract

Septic emboli (SPE) is a rare disorder that is associated with bone infections, infective endocarditis, sinusitis, orbital cellulitis, femoral thrombophlebitis, urinary tract infections, central venous catheter infections, prosthetic cardiac valve infections and pacemaker infections. Some of the causative organisms include *Klebsiella pneumoniae*, *viridans streptococci*, *staphylococcal aureus*. Some of the predisposing factors include of SPE include diabetes mellitus, intravenous drug use. These patients with suspected septic emboli should best be empirically treated with antibiotics such as vancomycin.

We present a 56 year old man with septic emboli with methicillin resistant *staphylococcal aureus* bacteremia and was started on IV vancomycin with clinical improvement. His MRI of his lower back revealed an epidural abscess.

We discuss a case of septic emboli with associated epidural abscess.

Epidural abscess is a rare condition that can result in permanent neurological deficits. We discuss the diagnosis, associated risk factors and treatment of septic emboli and epidural abscess.

## INTRODUCTION

We report a case of a 52 year old man with history of intravenous drug abuse and hepatitis C. He presented with fevers. He was treated for septic emboli and MRSA septicemia with vancomycin with clinical improvement. The patient was discharged home and returned a few weeks later with back pain that resulted in diagnosis of an epidural abscess of his lumbar spine. We will also review the case in view of current literature and treatment options.

## CASE

The patient presented to the hospital complaining of right knee pain and swelling for 15 days. He was subsequently admitted with presumptive diagnosis of septic arthritis. On admission, patient was empirically started on IV vancomycin and ceftriaxone.

On admission his blood pressure was 90/50 and he was febrile at 101 F.

Relevant findings on physical exam were presence of swollen right knee joint as well as tenderness over the knee.

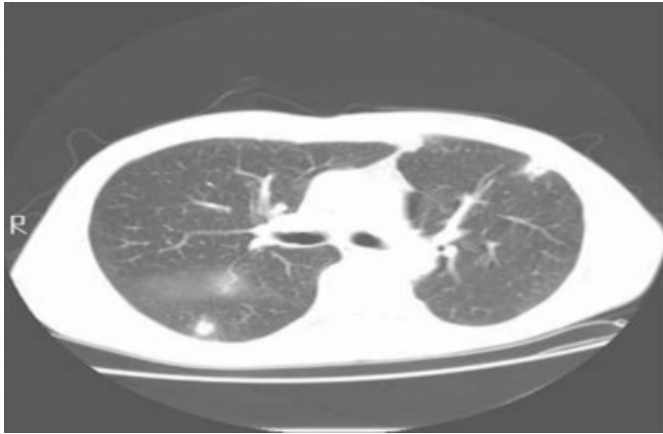
Relevant laboratory findings were elevated white blood cell count (wbc) of 12000 K/cmm. Sedimentation rate (ESR) was elevated at 92 mm/hr. HIV test was unremarkable.

The patient had an arthrocentesis done that revealed wbc of 38100 #/cmm.

Culture and sensitivities revealed moderate amount of wbcs and otherwise it was unremarkable. His skin tuberculin test (PPD) was normal.

Ct scan of the chest revealed evidence of centrilobular nodules measuring 3 cms in both lungs (Figure 1).

**Figure 1**



This was thought to be consistent with septic pulmonary emboli. Patient's venous duplex did not reveal any evidence of venous thrombosis in the legs. Ct head was unremarkable. Blood cultures were normal. His sputum showed presence of methicillin resistant staphylococcal aureus bacteria.

Patient's cardiac echocardiogram did not reveal any vegetations and was otherwise unremarkable.

Patient improved clinically and was discharged home on 3 week course of clindamycin and continued to follow up with his primary care doctor. One month after his hospital discharge, he developed lower back pain. He also had associated anorexia, weight loss and night sweats. He was afebrile on this admission and his pertinent exam findings were tenderness on palpation of his lower spine and there were no neurologic deficits. There was no evidence of urinary or bowel incontinence. His wbc was normal and also had elevated ESR at 70 mm/hr. He was subsequently hospitalized and his magnetic resonance imaging (MRI) of his lumbar spine revealed enhancement in the extramedullary space as well as compression of the thecal sac involving 3rd, 4th and 5th lumbar

vertebrae. These findings confirmed presence of an epidural abscess.

He was once again started on IV vancomycin. He had CT guided aspiration of the abscess. There was subsequent MRSA growth from this aspirate. He had a peripherally inserted central catheter (PICC) placed. He was discharged home on 15 more days of IV vancomycin on top of the 11 days of vancomycin he received as an inpatient.

## **DISCUSSION**

SPE can be difficult to diagnose and can present with a variety of features. These include fever (93%), dyspnea (36%), pleuritic chest pain (29%), cough (14%), and hemoptysis (7%) <sup>1</sup>.

Imaging plays a key role in the diagnosis of pulmonary embolism. Helical CT scan is the preferred imaging modality.

CT scan can reveal specific imaging findings such as presence of peripheral nodules with and without cavitation. Peripheral lesions were the most commonly found lesions (89.0%). This was accompanied by non-nodular infiltrates (7.0%) and wedge-shaped peripheral lesions (3.2%) <sup>2</sup>.

The median length of symptoms prior to diagnosis was 18 days but it can be anywhere between 5 and 180 days <sup>1</sup>.

Septic pulmonary emboli (SPE) is a rare condition that is associated with bone infections, infective endocarditis, sinusitis, orbital cellulitis, femoral thrombophlebitis, central venous catheter infections, prosthetic cardiac valve infections and pacemaker infections.

Mattar et al <sup>3</sup> described a case of periodontal disease that led to the diagnosis of septic emboli.

Miyaki et al <sup>4</sup> described a case of septic pulmonary embolism (SPE) induced by urinary tract infection. Lemierre's syndrome has also been described in the literature which consists of pulmonary septic emboli from an internal jugular vein thrombus after an anaerobic head and neck infection <sup>5</sup>.

Epidural abscess is a rare condition and its incidence was described as 0.88 cases per 100,000 person-years<sup>6</sup>. The approximate time between the onset of symptoms to the time of diagnosis is roughly 18 days<sup>6</sup>.

Some of the risk factors include presence of diabetes mellitus, immunosuppression, and intravenous substance abuse<sup>6</sup>. *Staphylococcus aureus* and streptococcal species are often the culprits for an epidural abscess<sup>6</sup>.

If not promptly diagnosed, it can cause devastating neurological damage.

In our patient despite the 2 week delay in diagnosis, he did not suffer any neurological deficits and was treated with antibiotics and CT guided needle

aspiration with subsequent clinical improvement.

### References

1. Cook RJ, Ashton RW, Aughenbaugh GL, Ryu JH: Septic pulmonary embolism: presenting features and clinical course of 14 patients. *Chest* 2005; 128:162-166.
2. Lee SJ, Cha SI, Kim CH, et al: Septic pulmonary embolism in Korea: Microbiology, clinicoradiologic features, and treatment outcome. *J Infect* 2007; 54:230-234.
3. Mattar CS, Keith RL, Byrd RP, Jr, Roy TM: Septic pulmonary emboli due to periodontal disease. *Respir Med* 2006; 100:1470-1474.
4. Miyaki J, Souma S, Narumiya Y, Chiba S, Kugiyama K: A case of septic pulmonary embolism showing the rapid appearance of multiple cavities in both lung fields induced by urinary tract infection. *Nihon Kokyuki Gakkai Zasshi* 2006; 44:879-884.
5. Peng MY, Fan CK, Chang FY: Lemierre's syndrome. *J Formos Med Assoc* 2005; 104:764-767.
6. Ptaszynski AE, Hooten WM, Huntoon MA: The incidence of spontaneous epidural abscess in Olmsted County from 1990 through 2000: a rare cause of spinal pain. *Pain Med* 2007; 8:338-343.

**Author Information**

**Askin Uysal, M.D.**

Department of Internal Medicine, Veterans Hospital Overton Brooks Medical Center

**Balaji Datti, M.D.**

Department of Internal Medicine, Veterans Hospital Overton Brooks Medical Center

**Mihaly Tapolyai, M.D.**

Department of Internal Medicine, Veterans Hospital Overton Brooks Medical Center

**Moheb Bektor, M.D.**

Department of Internal Medicine, Veterans Hospital Overton Brooks Medical Center

**Chris Lang, M.D.**

Department of Internal Medicine, Veterans Hospital Overton Brooks Medical Center