

## Case report

### A case report of *klebsiella pneumonia* septic arthritis in stern clavicular joint

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#### Abstract

Septic arthritis of sternoclavicular joint is rare and due to special setting including intravenous drug abuser, occult bacteremia, subclavian catheterization. The most common bacteria is staphylococcus aureus. We reported a 65 years old man patient with septic arthritis of sternoclavicular joint due to klebsiella pneumonia.

**Key words:** *klebsiella pneumonia*, *septic arthritis*, *stern clavicular joint*

#### Introduction

Septic arthritis is defined as bacterial, fungal, or mycobacterial infection in a joint; however, most of the acute forms of this clinical entity are caused by bacteria. Staphylococcus aureus is the most common pathogen causing the acute form of septic arthritis. (1-3) By contrast, Gram-negative bacteria-related septic arthritis is only reported in some special settings, including trauma, intravenous drug abuser, neonates, and the elderly and immunocompromised patients.

*Klebsiella pneumonia* is one of the most common pathogens in several clinical entities, including severe community-acquired pneumonia, community-acquired lung abscess, empyema, necrotizing fasciitis, and liver abscess in Taiwan. (4-12) However, the research focusing on septic arthritis caused by *K. pneumonia* is rare and only limited in the form of case reports. (13-15) Here in, we describe one rare case of *K. pneumonia*-associated septic arthritis in stern clavicular junction.

#### Case report

A 65 year old man patient came to our hospital with Complaints of a tender swelling in stern clavicular joint. (fig1) a month ago at another

hospital admissions were due to prostate biopsy. Then two days later fever and chills found. The mass appeared about 5 days after. In past medical history he just had hyperlipidemia and ischemic heart disease. He was not IV drug abuser and had not any other injection around the stern clavicular joint. On physical examination a 5\*8 cm mass was seen in stern clavicular joint that was erythematous, tender in palpation, fixed and firm.

#### CBC:

WBC	11.2*10 <sup>3</sup> /μl
RBC	2.98*10 <sup>6</sup> /μl
Hb	9.6 g/dl
MCV	101.3 fl
MCH	32.2 pg
PLT	242*10 <sup>3</sup> /μL

ESR: 75mm/h

FBS:103 mg/dl

Creatinine:1.1 mg/dl

S.G.O.T (AST):25IU/L

(ALT):24IU/

C-Reactive protein:++

BUN:41 mg/dl

S.G.P.T

The patient had no evidence for endocarditis in clinical manifestation and echocardiography was normal. Also the blood culture was negative.

In needle aspiration of the mass the laboratory reported the *klebsiella* spp. >100,000 CFU/ml that was sensitive to nitrofurantoin.

The MRI reported large soft tissue mass in right stern clavicular junction with the extension to deep and superficial area and to the lateral with joint and bone involvement is compatible of arthritis and clavicular osteomyelitis with soft tissue abscess. (Fig 2)

The synovial fluid analyses:

Appearance	Bloody
Color	Turbid
WBC	many
RBC	30-35
Neutrophil	90%
Lymphocyte	10%



Fig 1. septic arthritis of stern clavicular joint



Fig 2. Large soft tissue mass in right sternoclavicular junction

### Discussion

Bacterial infection of the stern clavicular joint is the most important diagnostic consideration in any patient complaining of unilateral SCJ arthritis. In reported series of septic arthritis, the

stern clavicular joint was involved in as many as 9% of patients (16). Unlike septic arthritis of most other joints, bacterial infection of this joint frequently is insidious in onset. The patients usually have anterior chest discomfort. Erythema, warmth, and swelling of the joint are often prominent, and there may be restricted, painful motion of the homolateral shoulder. Fever is generally low grade and shaking chills are infrequent. Leukocytosis may be absent, but the sedimentation rate is almost always strikingly elevated. The diagnosis is often made only after exploratory surgery with aspiration and biopsy.

In 2013 Chi-Chou Tseng et al. (17) described three cases of *K. pneumoniae* associated septic arthritis. Two of them had underlying diabetes mellitus, and one of them was caused by extended spectrum beta-lactamase-producing *K. pneumoniae*. All outcomes were favorable under appropriate management, which included antibiotic treatment or drainage.

In our case antibiotic therapy was not curative because of the extension to deep and superficial area, so the patient underwent surgery and drainage and debriding tissue .that it was curative.

### Conclusion

*K. pneumoniae* is one possible etiology of septic arthritis. In addition *K. pneumoniae* should be considered as one of the pathogen causing health care-associated infections. Appropriate antibiotic treatment based on the in vitro susceptibility tests and adequate drainage or debridement may improve the clinical outcome. We think that after biopsy, the organism came to the circulation and caused bacteremia and this rare septic arthritis .So in bacteriuria without symptoms the prophylactic antibiotic therapy can reduce the complications before urologic procedures.

### References

- 1-Methews CJ, CoakleyG. Septic arthritis: current diagnostic and therapeutic algorithm. *Curr Opin Rheumatol.* 2008;20(4):457-62
- 2-Goldenberg DL, ReedJL. Bacterial arthritis. *AU. Goldenberg DL, Reed JI. SO. N Engl J Med.* 1985;312(12):764
- 3-FrazeebW, FeeC, LambertL. How common is MRSA in adult septic arthritis? *Ann Emerg Med.* 2009; 54(5):695-700
- 4-ChengNC, YuYC, TaHC, HsuehIP, ChangSC, LaiSY, et al. Recent trend of necrotizing fasciitis in Taiwan: focus on monomicrobial *Klebsiella*

- pneumonia necrotizing fasciitis. *Clin Infect Dis*. 2012; 55(7):930-95.
- 5-HuHC, HuangCC, TsaiYH, LeeCH, HsiehMJ. Outcome analysis of patients requiring mechanical ventilation with severe community-acquired pneumonia and identified bacterial pathogens. *Chang Gung Med J*. 2005; 28(4):229-36.
- 6-WangJL, ChenKY, FangCT, HsuehPR, YangPC, ChangSC. Changing bacteriology of adult community-acquired lung abscess in Taiwan: *Klebsiella* Pneumonia versus anaerobes. *Clin Infect Dis*. 2005; 40(7):915-22
- 7- ChenKY, HsuehPR, Liaw PC, YangYS, Luh KT .A 10-year experience with bacteriology of acute thoracic empyema: emphasis on *Klebsiella* pneumonia in patients with diabetes mellitus. *Chest*. 2000; 117(6):1685-9
- 8- WangJH, LiuYC, LeeSS, YenMY, ChenYS, WangJH, WannSR, et al .Primary liver abscess due to *Klebsiella* pneumonia in Taiwan. *Clin Infect Dis*. 1998; 26(6):1434-8
- 9- Su SC, Huang FY, Liu CP. Prevalence of penicillin-resistant *Streptococcus pneumoniae* at a medical center in Taipei. *J Infect Dis Soc ROC* .1996;7:99–105.
- 10- ChangWN, Huang CR, LuCH, Chien CC. Adult *Klebsiella* pneumonia meningitis in Taiwan: an overview. *Acta Neurol Taiwan*. 2012; 21(2):87-96
- 11- Tsai SS, Huang JC, Chen ST, Sun JH, Wang CC, Lin SF, Hsu BR, et al.Characteristics of *Klebsiella* pneumonia bacteremia in community-acquired and nosocomial infections in diabetic patients. *Chang Gung Med J*. 2010; 33(5):532-9
- 12- Lin WH, Wang MC, Tseng CC, Ko WC, Wu AB, Zheng PX, Wu JJ. Clinical and microbiological characteristics of *Klebsiella* pneumonia isolates causing community-acquired urinary tract infections. *Infection*. 2010; 38(6):459-64
- 13- Cunha BA, Ienopoli SH, Hage JE. *Klebsiella* pneumonia septic wrist arthritis successfully treated with ertapenem and levoFloxacin. *J Chemother*. 2011 Dec; 23(6):376-7
- 14-Lin CJ, Lin CY, Li WY, Hsiue HC, Huang YT , Ruan SY, Wang JT, Hsueh PR . Repeated bacteraemia with subsequent septic arthritis caused by *Klebsiella pneumoniae* capsular serotype K57 in a patient with diabetes. *Clin Infect Dis*.2009; 49:1284–1286.
- 15- Schelelln S, Bramham K, Goldsmith D. Septic arthritis due to extended spectrum beta lactamase producing *Klebsiella pneumoniae* . *Joint Bone Spine*. 2007; 74(3):275-8.
- 16- Yood RA, Goldenberg DL. Sternoclavicular joint arthritis. *Arthritis Rheum*. 1980; 23(2):232-9.
- 17-Chi-Chou T, Chung-Da Wu, Wei-Ting Li, Huan-Tee Ch, Po-Yih Ch. Acute septic arthritis caused by *Klebsiella pneumoniae*. *Formosan journal of musculoskeletal disorders*. 2013; 4(2):51-52.