

Paraparesis and Bilateral Pulmonary Abscesses Secondary to Pyogenic Spondylodiscitis Caused by Streptococcus Anginosus Group Bacteria

Yasunori Tatara, Takanori Niimura and Hisanori Mihara

Spine Center, Yokohama Minami Kyosai Hospital, Kanagawa, Japan

Keywords:

Streptococcus Anginosus Group Bacteria, Pyogenic Spondylodiscitis, Pulmonary Abscess

Spine Surg Relat Res 2020; 4(2): 190-191
dx.doi.org/10.22603/ssrr.2019-0069

A 60-year old healthy woman but with a congenital hearing loss was referred to our clinic for an examination of prolonged low backache, difficulty in walking, and dysuria. She had been experiencing low backache for a month and was unable to walk or urinate for 3 days prior to visiting our clinic. Neurological examination of the patient revealed hyperesthesia in the bilateral lower extremities, severe motor weakness (a grade of 2/5) of the iliopsoas and quadriceps femoris muscles, and a reduction of the anal sphincter tone. Consequently, she was hospitalized urgently for a close examination.

Laboratory data revealed a white blood cell count of 31,600/ μ l, a raised C-reactive protein of 26 mg/dl, and a low serum albumin of 1.9 g/dl, but she was afebrile. Chest radiograph revealed bilateral pleural effusion. In addition, contrast-enhanced computed tomography (Fig. 1) and magnetic resonance imaging (MRI) (Fig. 2) were performed, and finally, she was diagnosed with pulmonary abscess and epidural abscess secondary to spondylodiscitis in the thoracic spine.

Immediately after admission, a chest tube was inserted into the right chest, and an empirical antibiotic (meropenem hydrate 500 mg, IV four times daily) was administered. However, her dyspnea developed on the day after her admission, and percutaneous oxygen (SpO₂) saturation began to decrease to 75% despite the initiation of oxygen inhalation. Therefore, she underwent right-side thoracotomy to drain empyema, followed by discectomy and noninstrumented fusion at T8/9 to drain epidural abscess. Her dyspnea improved immediately after surgery. Her dysuria had also gradually improved, but the improvement of lower-limb

muscle strength was limited. She was instructed to wear a thoracolumbar spinal orthosis after surgery.

Blood and pleural fluid cultures all grew streptococcus anginosus group (SAG) susceptible to penicillin. Use of meropenem hydrate was discontinued, and penicillin G (60,000 U, IV four times daily) was administered for 4 weeks. C-reactive protein was decreased significantly after its administration; however, 4 weeks after the first surgery, MRI revealed that spinal canal stenosis from T6 to T12 was residual. In addition, the weakness in her lower-limbs muscle strength remained, and the thoracic x-rays showed instability of the lesion. Therefore, posterior decompression with instrumented fusion from T6 to T12 was performed. Due to allergy to penicillin G, clindamycin (600 mg, IV three times daily) was used as a substitute and administered for 6 weeks, but C-reactive protein became negative.

On hospital day 83, she was transferred to another hospital for rehabilitation. Seven months postoperatively, she was able to walk with a walking frame. One year postoperatively, she was able to go outdoors with a cane, and radiographic examinations (Fig. 3) revealed stable bony fusion without any lesions in the thoracic spine.

The SAG bacteria are facultative anaerobic pathogens and widely detected in the mouth, the upper respiratory tract, the gastrointestinal tract, and the vagina¹. The SAG bacteria are highly virulent and progress rapidly, and it is not surprising that they might cross tissue planes². Both penicillin G and cephalosporins are effective for the SAG bacteria, but resistance to both exists³. The SAG bacteria account for 13%-50% of all cases of pulmonary abscess and/or empyema thoracis⁴. Early diagnosis of thoracic SAG is vital given the re-

Corresponding author: Yasunori Tatara, yata20101107@gmail.com

Received: August 1, 2019, Accepted: August 29, 2019, Advance Publication: September 20, 2019

Copyright © 2020 The Japanese Society for Spine Surgery and Related Research

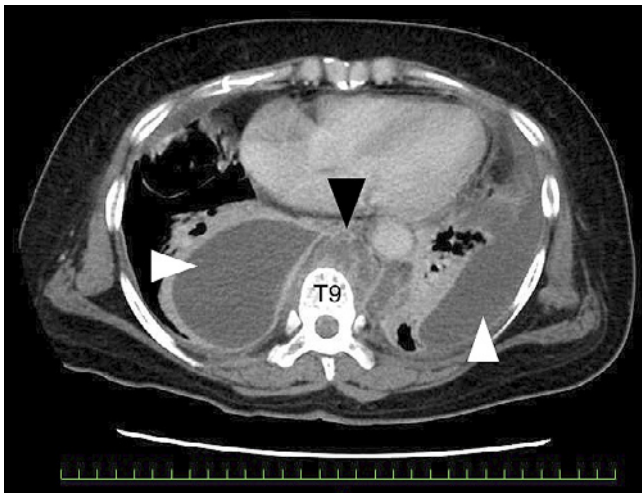


Figure 1. Preoperative contrast-enhanced chest CT. A prevertebral abscess extending from T8 to T9 (black arrow head) and bilateral empyema (white arrow head) with the right side dominant.



Figure 2. Preoperative thoracic MRI. Spondylodiscitis at T8/9 and an epidural abscess extending from T6 to T11.

ported mortality rates between 15% and 30%²⁾. However, there have been only a small number of English literature on spondylodiscitis caused by SAG bacteria⁵⁻⁸⁾. Faraj et al.⁸⁾ recommended aggressive surgical treatment combined with a prolonged antibiotic regimen.

Although penicillin G was effective for SAG bacteria, early surgical intervention was essential for spondylodiscitis caused by SAG bacteria because they were highly virulent and progress rapidly.

Conflicts of Interest: The authors declare that there are no relevant conflicts of interest.

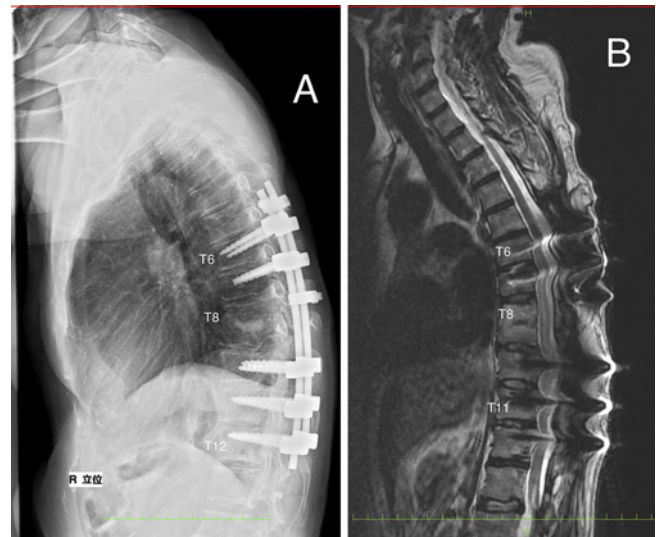


Figure 3. X-ray (A) and MRI (B) 1 year postoperatively. Stable bony fusion is achieved, and no lesion in the thoracic spine is observed.

Author Contributions: TY wrote and prepared the manuscript, and all of the authors participated in the study design. All authors have read, reviewed, and approved the article.

Informed Consent: The patient and her family consented to submitting data from the case for publication.

References

1. Mukae H, Noguchi S, Naito K, et al. The importance of obligate anaerobes and the streptococcus anginosus group in pulmonary abscess: a clone library analysis using bronchoalveolar lavage fluid. *Respiration*. 2016;92(2):80-9.
2. Sunwoo BY, Miller WT. Streptococcus anginosus infections: Crossing tissue planes. *Chest*. 2014;146(4):e121-5.
3. Giuliano S, Rubini G, Conte A, et al. Streptococcus anginosus group disseminated infection: case report and review of literature. *Infez Med*. 2012;20(3):145-54.
4. Noguchi S, Yatera K, Kawanami T, et al. The clinical features of respiratory infections caused by the Streptococcus anginosus group. *BMC Pulm Med*. 2015;15:133.
5. Meyes E, Flipo RM, Van Bosterhaut B, et al. Septic Streptococcus milleri spondylodiscitis. *J Rheumatol*. 1990;17(10):1421-3.
6. Fabie F, Arrue P, Thorn-Kany M, et al. Cervical spine infection with Streptococcus anginosus. Case report. *Neurochirurgie*. 1999; 45(5):417-21.
7. Jacobs JA, Pietersen HG, Walenkamp GH, et al. Intervertebral infection caused by Streptococcus milleri. A case report. *Clin Orthop Relat Res*. 1994;(302):183-8.
8. Faraj A, Krishna M, Mehdiyan SM. Cauda equina syndrome secondary to lumbar spondylodiscitis caused by Streptococcus milleri. *Eur Spine J*. 2015;(5):134-6.

Spine Surgery and Related Research is an Open Access journal distributed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view the details of this license, please visit (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).