

## Vertebral osteomyelitis due to anaerobic bacteria *Veillonella parvula* A Case Report

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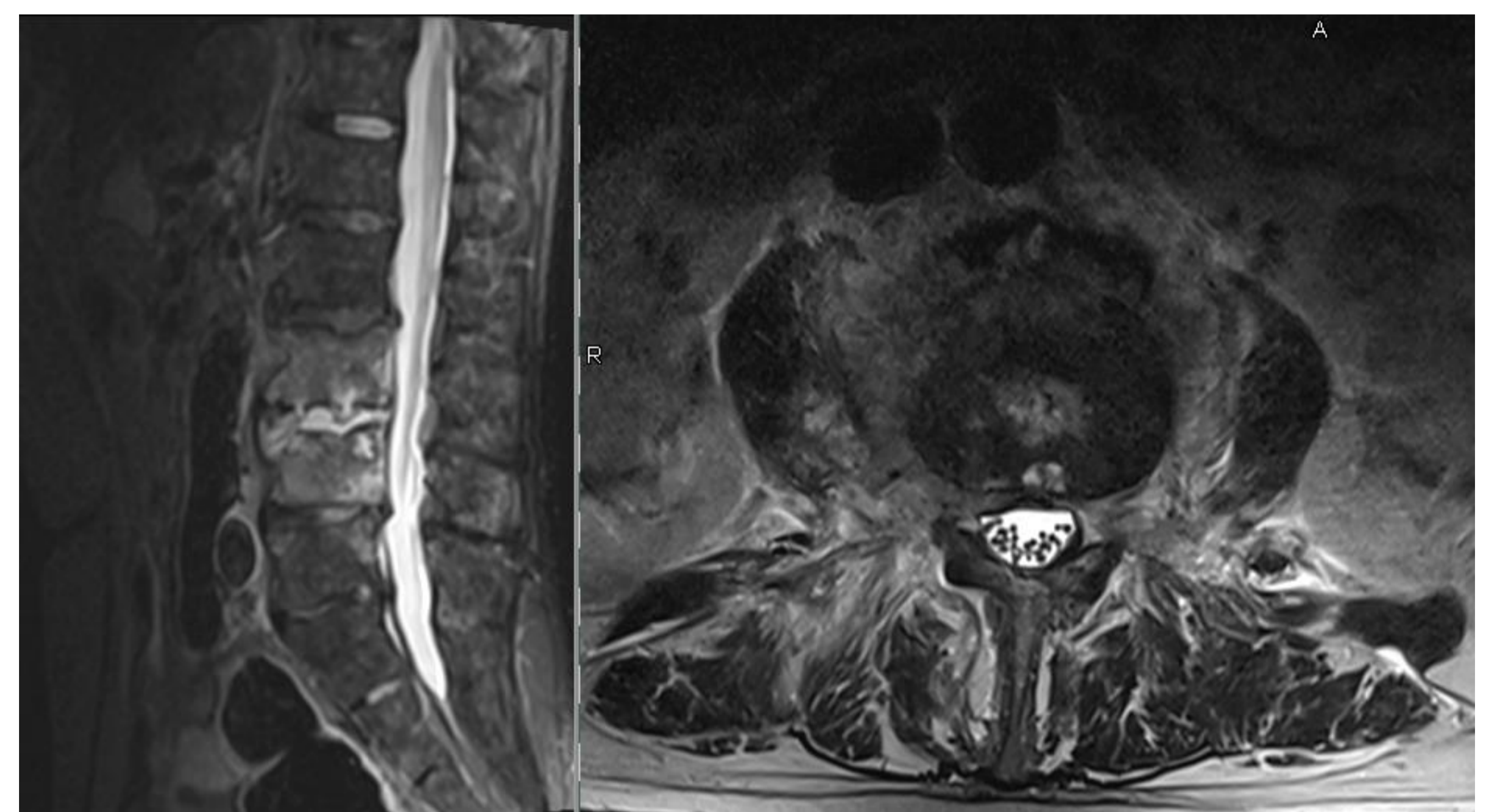
**Introduction:** Pyogenic vertebral osteomyelitis (VO) due to Gram-positive aerobic bacteria and its treatment is well known. VO caused by anaerobic Gram-negative pathogen is rare. In particular, the VO caused by *Veillonella* species is an absolute rarity. No established management recommendations exist.

**Methods:** A 79-year-old man presented with a one-month history of constant lower back pain radiating to the right thigh. On admission, the inflammation markers were elevated. X-ray and a CT-scan of the lumbar spine revealed destruction of the intervertebral space L3/4 and the corresponding endplates (**Figure 1**). Blood cultures taken on admission were negative. MRI-scan of the lumbar spine revealed an advanced spondylodiscitis L3/4 and two abscesses in the right psoas muscle (**Figure 2**). A CT-guided fine needle biopsy was performed and the empiric intravenous (iv.) antibiotic therapy with amoxicillin/clavulanate 2,2g four times daily iv. was initiated. As the results of the biopsy did not show any growth of bacteria amoxicillin/clavulanate was stopped. After an antibiotic-free interval of 5 days an open transpedicular biopsy was performed. On the same day, iv. amoxicillin/ clavulanate was resumed. The bacteriological examinations on aerobic/anaerobic cultures showed no results. The eubacterial PCR (16S rDNA-sequencing) revealed *Veillonella parvula* as the causing pathogen. The antibiotic therapy was switched to ceftriaxone 2g iv. and metronidazole 500mg iv. A CT-scan of the abdomen was performed on day 21, which showed increasing abscess collection in the right psoas muscle. A drain was inserted and the abscess formation was subsequently drained for 4 days. 6 weeks after admission the patient presented himself in good health and pain free to our outpatient clinic. Inflammation markers had normalized.



**Figure 1:** X-ray/CT-scan of the lumbar spine shows the destruction of the intervertebral space resulting in the kyphosis in the segment L3/4

The CT-scan and x-rays of the lumbar spine showed no instability of the spine without any progression of the kyphotic deformity L3/L4. The antibiotics were switched to amoxicillin/clavulanate 1g oral three times daily for another 2 weeks, completing 6 weeks of antibiotic treatment altogether. The patient presented himself to the last follow-up at day 95 in perfect shape, without any symptoms and further changes in the lumbar spine X-rays (**Figure 3**).



**Figure 2:** MRI: advanced spondylodiscitis L3/4 with fluid signal in the disc and two abscesses in the right Psoas major muscle



**Figure 3:** X-ray of the lumbar spine, follow up: day 95

**Conclusions:** We present a case of VO caused by *Veillonella parvula* with good clinical outcome. Surprisingly no risk factors and predispositions such as instrumentation or diseases of the digestive tract could be identified. We advise physicians to maintain a high level of suspicion when *Veillonella* is discovered on cultures of by PCR from biopsies. Treatment should contain a betalactam with betalactamase inhibitor or third generation cephalosporine. Six weeks of treatment seem to be sufficient for the complete recovery of the patient.

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