

VEILLONELLA DISCITIS: A RARE PRESENTATION AND REVIEW OF LITERATURE

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Background

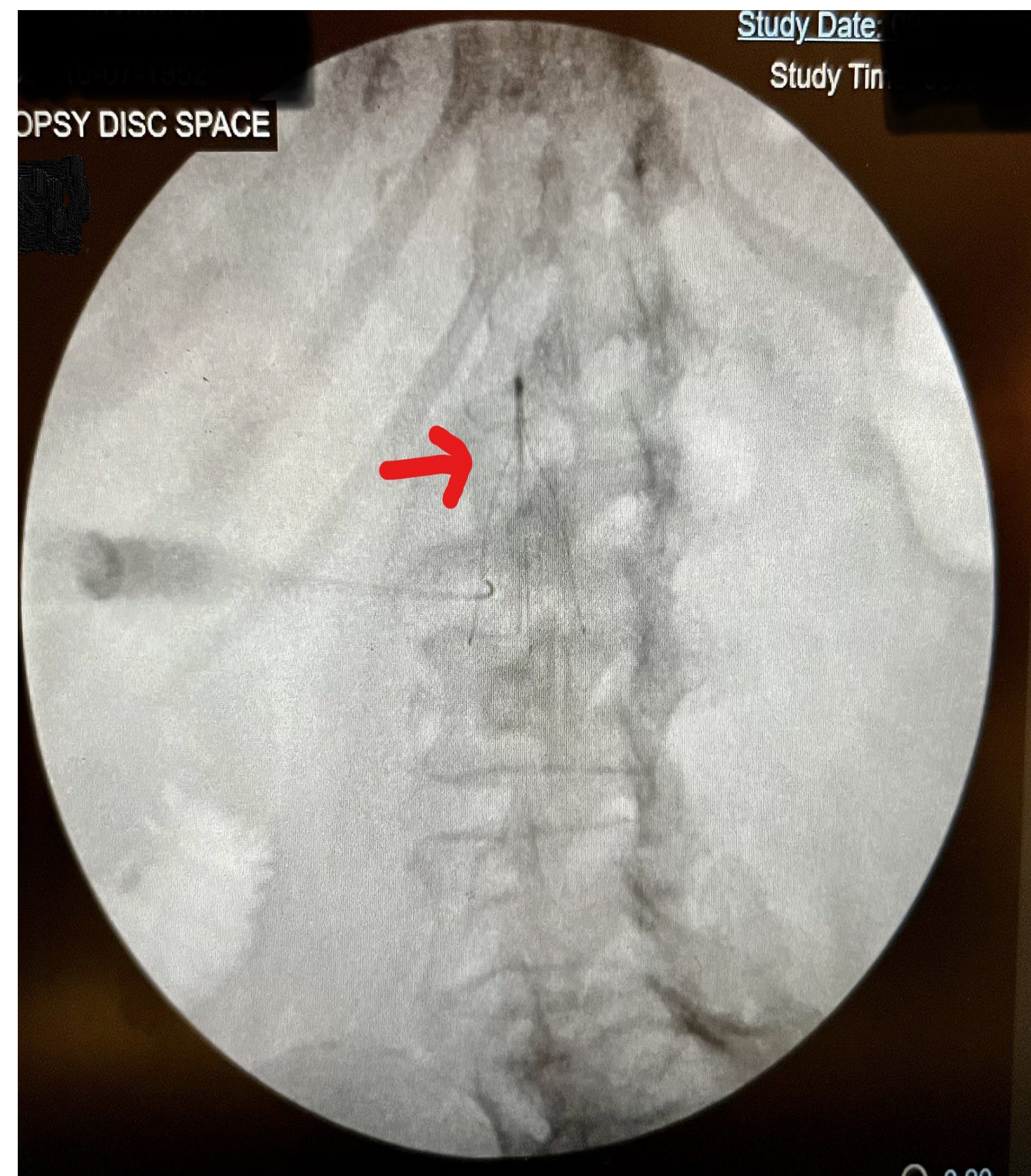
Veillonella is an anaerobic Gram-negative coccus found as a commensal in oral, respiratory, gastrointestinal and genitourinary tract of human beings. Rarely, it can cause serious infections like meningitis, pulmonary infections, endocarditis, osteomyelitis, prosthetic joint infections, and bacteremia, by production of an endotoxin lipopolysaccharide. Although most *Veillonella* infections occur in immunocompromised individuals, we hereby describe cases of *Veillonella* discitis, a rare presentation, in immunocompetent patients [1].

Objective

- The objective of this study is to highlight the importance of recognizing *Veillonella* as a potential cause of discitis by presenting a case reported in our hospital, along with a literature review of discitis specifically caused by this organism.
- We also aim to educate medical professionals regarding the various possible presentations of *Veillonella* discitis, along with the demographic groups affected, predisposing factors, duration of symptoms, appropriate diagnostic methods and successful treatment options available.

Case presentation

- A female patient in her 70s, with past medical history of recent pulmonary embolism (on apixaban), and status-post inferior vena cava (IVC) filter placement, presented to the hospital with L2-L3 discitis on the basis of an out-patient magnetic resonance imaging (MRI).
- On interviewing, she reported on-going back pain since the last two months, which was gradually progressing, non-radiating, 8/10 on severity, mostly dull aching, but sometimes sharp, shooting, and wrapping around her anterior abdomen, aggravated by movement and relieved on rest. Patient did not report any inciting event or trauma. She denied any other systemic symptoms. She did report getting intra-spinal injections several months ago for chronic back pain.
- On admission, her vital signs were as follows: a blood pressure (BP) of 130/72 mmHg, a heart rate (HR) of 73 beats/minute, respiratory rate (RR) of 18/minute, temperature of 36.9 °C, and an oxygen saturation of 99% on room air.
- Her lab values were significant for an erythrocyte sedimentation rate (ESR) of 105, alkaline phosphate (ALP) of 127, a normal C-reactive protein (CRP) of 4.3, a normal white blood cell count (WBC) of 7.8, with rest of the lab work being grossly unremarkable.
- She had a normal blood culture showing no growth of organisms. A biopsy of the lumbar MRI lesion by interventional radiology (IR) was eventually performed and samples were sent for Gram stain, culture and cytology (image on the right).
- Infectious disease (ID) was consulted and the patient was empirically started on vancomycin 1g I.V. every 12 hours and cefepime 2g I.V. every 8 hours, planned for six weeks, with weekly monitoring of labs.
- Patient gradually showed improvement of back pain severity to 5/10. Biopsy specimen study showed growth of *Veillonella* species.
- Antibiotics were changed to ceftriaxone 2g I.V. once daily and metronidazole 500 mg P.O. every 8 hours, for a total of six weeks, along with weekly ESR, CBC and CMP monitoring, as per ID recommendations.
- The patient was eventually discharged from the hospital, after PICC line placement and the six-weeks antibiotic course was completed from home.



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Results

SI	Study	Gender/age	Presentation with duration	Level of discitis	Cultures positive	Management	Possible source/risk factor
1.	Present case (2022)	F/70s	Backache (2 months)	L2-L3	Tissue	Ceftriaxone 2g I.V. daily and metronidazole 500mg P.O. thrice a day for 6 weeks.	Intra-spinal injections or IVC filter
2.	Richards T. et al. (2022) [1]	M/82	Backache (2 week), fever, subsequent sepsis	T12-L1	Blood	I.V. ceftriaxone daily, followed by oral amoxicillin 875 mg/125 mg 12-hourly for 6 months.	Possibly age, no other source could be determined
3.	Gouze H. et al. (2019) [2]	F/35	Backache (5 months)	L4-L5	Tissue	Ceftriaxone 2g daily and metronidazole 500 mg every 8 hour for two days, oral amoxicillin 10 g daily for six weeks	Obesity, tooth infection
4.	Chen Y.C. et al. (2014) [3]	M/68	Backpain (3 weeks)	L1-L2	Blood and tissue	Surgical debridement and I.V. Amoxicillin/clavulanic acid 1200mg every 8-hour, followed by oral amoxicillin/clavulanic acid 875/125 mg every 12 hour for 4 weeks	Sinus squamous cell carcinoma
5.	Kishen T.J. et al. (2012) [4]	F/76	Backache (3 months), fever, weight loss	L1-L2	Blood and tissue	Spinal surgery, cefotaxime 1g twice a day and I.V. metronidazole 500 mg thrice a day for 4 weeks, followed by amoxicillin 875mg plus clavulanic acid 125mg P.O. twice a day and metronidazole 400 mg P.O. thrice a day for 6 weeks.	Could not be determined
6.	Marriott D. et al. (2007) [5]	M/55	Backache, night sweats and rigors (2 days)	L2-L3	Blood	I.V. cefotaxime for 10 days, ceftriaxone for about 4.5 weeks, followed by P.O. Amoxicillin and clavulanic acid for another 6 weeks.	Endoscopy and colonoscopy with small bowel and rectal biopsy
7.	Isner-Horobeti M. et al. (2006) [6]	M/27	Backpain	L4-L5	Tissue	I.V. amoxicillin 12g/day for 3 weeks, followed by amoxicillin 6g/day for 8 weeks.	Could not be determined
8.	Bongaerts G.P.A. et al. (2004) [7]	M/74	Backpain (4 months)	T12-L1	Tissue	I.V. penicillin G (12 × 106 IU) for 6 weeks.	Dental carries, Trans-urethral resection of prostate
9.	Hidalgo C. et al. (2000) [8]	M/70	Backpain (1 month)	L3-L4	Unavailable (article in Spanish)	Unavailable (article in Spanish)	Could not be determined
10.	Singh N et al. (1992) [9]	F/61	Backpain (1 week), fever	L5-S1	Blood and tissue	I.V. Ceftriaxone for 6 weeks and surgery	Rheumatoid arthritis and Sjogren's syndrome

Discussion

- Veillonella* infection was largely found in the setting of either already existing anaerobic environment or created by decreased perfusion in the affected area and production of large amounts of lactic acid. The ability to form a biofilm further increases the infectivity of this organism [5].
- On the basis of our review, *Veillonella* discitis was most frequently found in the 60s-70s age group with no particular association with gender, chronic backache being the most common presenting symptom and maximum cases occurring in the presence of an inciting event. Tissue cultures gave the most accurate diagnosis. Ceftriaxone was found to be the most effective agent, followed by oral amoxicillin and clavulanic acid therapy, for a total of 4-6 weeks.

Conclusion

- Awareness about the presentations of *Veillonella* discitis can lead to early diagnosis and appropriate management, leading to prevention of neurological complications, improved management of chronic symptoms and overall better prognosis.
- Patients can be managed solely by pharmacological methods (ceftriaxone being the drug of choice as per our review) with suitable outcomes. Early recognition can successfully prevent surgical intervention and dissemination of infection in these patients.

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