|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||

Available online on http://www.ijmbs.info

International Journal of Medical and Biomedical Studies; 2026; 10(2); 65-69

A case report

Aeromonas hydrophila Osteomyelitis of the Femur in a 14-Year-Old Girl on Antitubercular Therapy: A Rare Presentation

Mohit Gandhi[1], Zeeshan Ahmad Khalil[2]

[1]Senior resident, Department of Orthopaedics, Vardhman Mahavir Medical College and Safdarjung Hospital, Delhi, India
[2]Post graduate resident, Department of Orthopaedics, Vardhaman Mahavir Medical College and Safdarjung Hospital, Delhi, India

Received: 04-02-2026 / Revised: 27-02-2026 / Accepted: 20-03-2026
DOI: https://doi.org/10.32553/ijmbs.v10i2.3235
Corresponding author: Zeeshan Ahmad Khalil
Conflict of interest: No conflict of interest

Abstract:

Introduction: Aeromonas hydrophila is an uncommon cause of musculoskeletal infections, particularly in immunocompetent pediatric patients [1]

Case Presentation: We report a 14-year-old girl on antitubercular therapy (ATT) who developed chronic non-healing medial thigh wound and femoral osteomyelitis following an aspiration procedure. MRI showed intramedullary osteomyelitis with multiloculated intramuscular collections. Surgical incision and drainage with cortical windowing was performed. Culture revealed Aeromonas hydrophila, sensitive to trimethoprim-sulphamethoxazole, levofloxacin, and gentamicin. She improved well with targeted therapy and continued ATT.

Conclusion: Atypical pathogens should be considered in osteomyelitis cases with prior invasive procedures or chronic systemic illness. Early surgical intervention and organism-specific antibiotics lead to good outcomes.

Introduction

Osteomyelitis in children is most commonly caused by Staphylococcus aureus [2]. Gram- negative pathogens are less frequent but are increasingly recognized in chronic or complicated infections. Aeromonas hydrophila is a waterborne Gram-negative bacillus associated with wound infections following aquatic exposure or trauma [1,3,8,9].

Reports of A. hydrophila osteomyelitis are rare, particularly in pediatric patients without typical risk factors [4]. Children with tuberculosis or on antitubercular therapy may have altered immunity, potentially predisposing them to secondary bacterial infections [5].

We present a rare case of A. hydrophila femoral osteomyelitis in a 14-year-old girl on ATT.

Case Presentation

A 14-year-old female presented with pain, swelling, and a non-healing wound over the medial aspect of the left thigh for one month. Symptoms began as gradually progressive swelling. She had undergone an aspiration procedure at an outside clinic, with no microbiological evaluation

performed, and the aspiration site failed to heal.

She was a known case of pulmonary tuberculosis and had been on ATT for three months, with adequate compliance.

Clinical Examination

- A 10 × 5 cm wound on the medial thigh
- Partially covered with eschar
- Unhealthy discharge
- Diffuse swelling and tenderness
- No neurovascular deficits

Fig 1- Wound on medial aspect of thigh, covered partially with eschar with unhealthy base and diffuse swelling and tenderness

Imaging

X- ray showed minimal changes, with mild increase in medullary radiolucency and soft tissue shadow

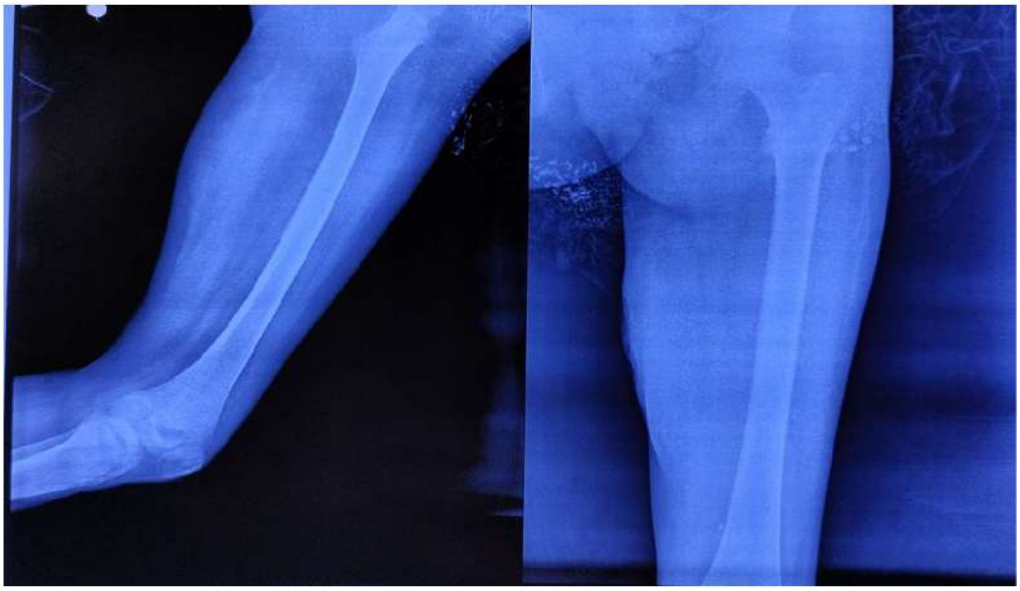

Fig 2- Lateral and AP radiographs of patients femur showing increased soft tissue shadow and minimal bony changes

MRI of the left thigh showed:

- **Intramedullary osteomyelitis of the femur**
- **Multiloculated intramuscular cystic collections** in proximal and mid medial thigh compartments

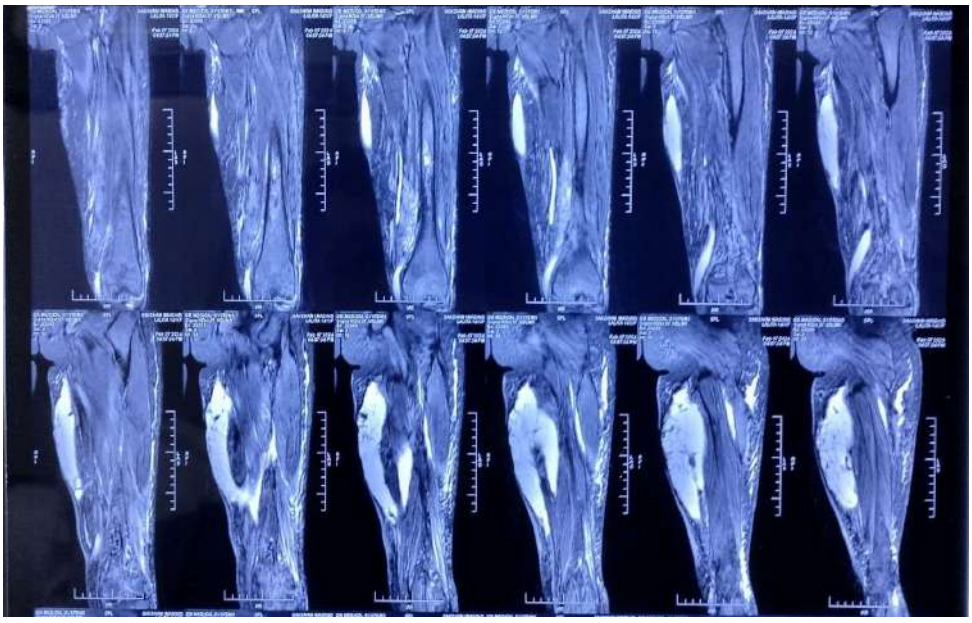

Fig 3- MRI coronal cuts of the thigh showing increased soft tissue intensity in medial aspect of thigh.

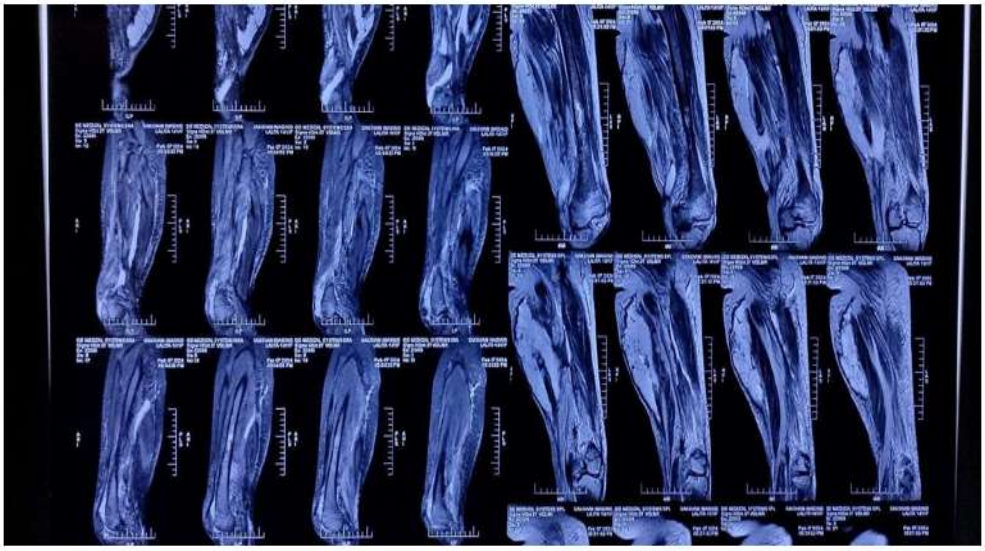

Fig 4- MRI sagittal cuts showing hyperintensities in femur shaft.

Surgical Management

The patient underwent:

- **Incision and drainage,**
- **Sequestrectomy and cortical window formation** in the left femur
- Thorough debridement.

Samples were sent for CBNAAT, bacterial culture and sensitivity, and histopathology.

Microbiological Findings

- CBNAAT: Negative for Mycobacterium tuberculosis
- Culture: Aeromonas hydrophila
- Sensitive to: trimethoprim-sulphamethoxazole, levofloxacin, gentamicin

Treatment and Follow-up

She received postoperative IV cefoperazone-sulbactam, later discharged on oral trimethoprim-sulphamethoxazole based on sensitivity.

ATT was continued for pulmonary TB.

Wound healing progressed well. Subsequent follow-up showed:

- Resolution of swelling
- Healed wound
- Imaging confirming resolution of osteomyelitis

Fig 5- Wound healed with secondary intention with reduced swelling and pain

Fig 6- Follow up Xray showing absence of osteomyelitic features in femur.

Discussion

Aeromonas hydrophila infections typically occur after exposure to contaminated water or traumatic inoculation [1,3]. Osteomyelitis by this organism is rare, with only few pediatric cases reported most likely due to wound contamination from dirty water4. The soft tissue infections are severe and may result in necrotising fasciitis and sometimes even fata [8,9]. In our literature review we could come across only three cases of non- traumatic osteomyelitis; one in a diabetic patient, one in a cirrhotic patient and one in a leukemic child [7,8,9]. All the cases showed poor immunity and were treated with either only

antibiotics or in combination with appropriate surgery. In our patient, there was no aquatic exposure; the most plausible route of infection appears to be the prior aspiration procedure, potentially performed under unsterile conditions.

Patients with tuberculosis may have altered immune responses due to chronic infection, malnutrition, or medications, predisposing them to superadded bacterial infections [5].

This case highlights key points:

1. Importance of culture-directed therapy in unusual or chronic musculoskeletal infections.
2. Early surgical debridement and medullary decompression remain cornerstone management in chronic osteomyelitis6.
3. Atypical pathogens should be considered in cases with prior invasive interventions or poor local tissue health.

Conclusion

This rare case of Aeromonas hydrophila femoral osteomyelitis in a child on ATT underscores the need to consider uncommon pathogens in non-healing wounds and chronic osteomyelitis. Surgical debridement combined with targeted antibiotic therapy ensures excellent outcomes.

References

1. Janda JM, Abbott SL. The genus Aeromonas: taxonomy, pathogenicity, and infection. Clin Microbiol Rev. 2010;23(1):35-73.
2. Peltola H, Pääkkönen M. Acute osteomyelitis in children. N Engl J Med. 2014;370:352-60.
3. Parker JL, Shaw JG. Aeromonas spp. clinical microbiology and disease. J Infect. 2011;62(2):109-18.
4. Parker JL, Shaw JG. Aeromonas infections: an update. Infect Dis Clin North Am. 2020;34(4):895-911.
5. World Health Organization. Treatment of tuberculosis guidelines. 4th ed. Geneva: WHO; 2010.
6. Lew DP, Waldvogel FA. Osteomyelitis. Lancet. 2004;364(9431):369-79.
7. Agrawal S, Srigyan D, Nag HL, Kapil A, Dhawan B. Chronic osteomyelitis by Aeromonas hydrophila: A silent cause of concern. J Lab Physicians. 2017 Oct-Dec;9(4):337-339. doi: 10.4103/JLP.JLP_45_17. PMID: 28966503; PMCID: PMC5607770.
8. Gunasekaran L, Ambalkar S, Samarji RA, Qamruddin A. Post-traumatic osteomyelitis due to aeromonas species. Indian J Med Microbiol. 2009 Apr-Jun;27(2):163-5. doi: 10.4103/0255-0857.49435. PMID: 19384045.
9. Sood S, Nerurkar V. Fatal Necrotizing Soft Tissue Infection by Aeromonas hydrophila. J Clin Diagn Res. 2014 Apr;8(4):DD06-7. doi: 10.7860/JCDR/2014/7833.4270. Epub 2014 Apr 15. PMID: 24959446; PMCID: PMC4064911.