International Journal of Orthopaedics Sciences

E-ISSN: 2395-1958
P-ISSN: 2706-6630
IJOS 2023; 9(1): 487-492

https://www.orthopaper.com
Received: 03-12-2022
Accepted: 05-02-2023

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Brodies abscess in distal tibia: A case report

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DOI: https://doi.org/10.22271/ortho.2023.v9.i1g.3333

Abstract
40 year old male patient presented with the pain and swelling affecting the right distal leg and ankle, After blood workup and radiological evaluation, a diagnosis of Brodie's Abscess was arrived. The patient was treated surgically with curettage and vancomycin infused STIMULAN beads were left in situ. The patient was followed up on an OPD basis and made a full recovery with good patient compliance.

Keywords: Brodie's abscess, stimulan, curettage

Introduction
Brodie's abscess is a subacute form of hematogenous osteomyelitis, it is an uncommon condition, usually mistaken for a bone tumor
Brodie's abscess is difficult to diagnose because characteristic signs and symptoms of the acute form of the disease are minimal and non-specific.
The patient is usually a child or adolescent who has had pain near one of the larger joints for several weeks or even months.
What makes this case especially interesting is that patient developed and extruding swelling at the site of original lesion, growing from the source of infection in the distal tibia and ankle.

Materials and Methods.
A 40 year old male patient presented with the complains of pain and swelling of the right leg and ankle and for the past one month. The pain was sudden in onset, gradually progressive, initially moderate then severe. Pain was confined to the leg and the ankle. Aggrevated on walking and partially relieved by rest, patient also has complains of diffuse swelling of the right leg and ankle, Swelling was insidious in onset and gradually progressive in nature increased on walking and partially relieved by limb elevation, On examination, patient is a moderately built and nourished middle aged male with diffuse swelling around the right leg and ankle. There was local rise of temperature with diffuse tenderness around the right ankle. Movements at the right ankle were restricted, painful and associated with Pain, Bilateral distal pulses were well felt and equal. Routine blood work up was done, Total count was 11100 and ESR was elevated to 64. X-Rays of the limb were also taken and showed Osteolytic Lesion in Distal Tibia with arthritic changes in the ankle joint. Doppler study of the limb revealed no evidence of DVT/thrombophlebitis.
A provisional diagnosis of Tubercular abscess was suspected and in view of this an MRI was done. MRI features were suggestive of an interosseus Brodie's Abscess with extraosseus extensions and associated tendosynovitis. The patient was started on IV antibiotics for 3 weeks and analgesics for pain. He was subsequently worked up for OT and Decompression, Curettage and vancomycin infused STIMULAN Administration was done. Large amounts of subcutaneous and intraosseus fluid collection was noted which was sent for microbiological examination which showed the causative agent to be Stapylococcus aureus and IV antibiotics were adjusted according to sensitivity. Patient's limb was immobilized in a cast and a window was created to facilitate regular dressings, the wound healed uneventfully and sutures were removed after 14 days. The cast was removed after 6 weeks and partial weight bearing was started. Full weight bearing was started at 3 months and the patient was able to return to his daily activities.

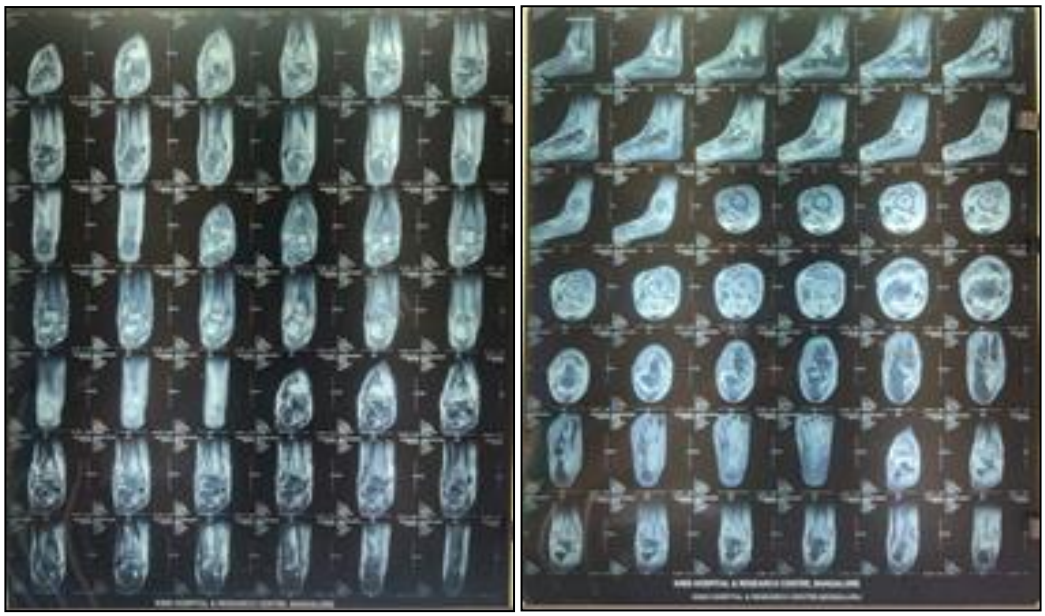
Discussion

Brodie's abscess is localized form of osteomyelitis, is usually found in the cancellous tissue near the end of the long bone. Typically there is a well-defined cavity in cancellous bone – usually in the tibial metaphysis – containing seropurulent fluid and rarely pus. The cavity is lined by granulation tissue containing a mixture of acute and chronic inflammatory cells. The surrounding bone trabeculae are often thickened. The lesion sometimes encroaches on and erodes the bony cortex. The WBC count and blood cultures usually show no abnormality but the ESR is sometimes elevated. The typical radiographic lesion is a circumscribed, round or oval radiolucent 'cavity' 1–2 cm in diameter. Most often it is seen in the tibial or femoral metaphysis. Sometimes the 'cavity' is surrounded by a halo of sclerosis; occasionally it is less well defined, extending into the diaphysis. Metaphyseal lesions cause little or no periosteal reaction; diaphyseal lesions may be associated with periosteal new bone formation and marked cortical thickening. Treatment may be conservative if the diagnosis is not in doubt. Immobilization and antibiotics intravenously for 4 or 5 days and then orally for another 6 weeks usually result in healing, If the diagnosis is in doubt, an open biopsy is needed and the lesion may be curetted at the same time. Curettage is also indicated if the x-ray shows that there is no healing after conservative treatment. This is always followed by a further course of antibiotics our case showed good results with surgical management and allowed the patient to return to daily activities after a brief period of rehabilitation. The use of local antibiotics via stimulan as an adjuvant to 3 weeks of IV and 3 weeks of oral antibiotics showed good patient compliance and the patient tolerated the treatment well our case showed good results with surgical management and allowed the patient to return to daily activities after a brief period of rehabilitation. The use of local antibiotics via stimulan as an adjuvant to 3 weeks of IV and 3 weeks of oral antibiotics showed good patient compliance and the patient tolerated the treatment well.

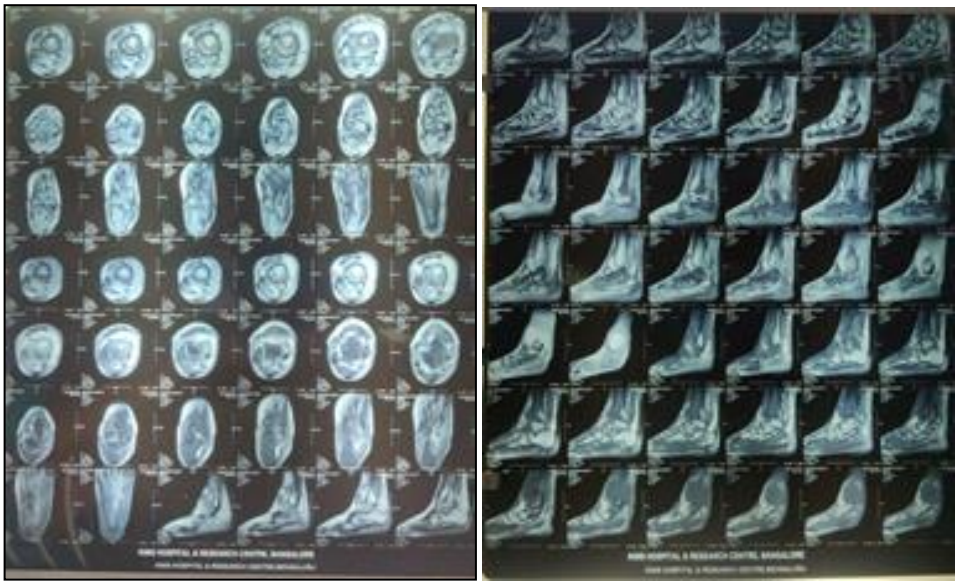
Illustrations

Clinical Picture

Pre Op X-Ray



MRI Images



MRI Report

Intra op Images

Test Name	Test Result
AEROBIC CULTURE	
SPECIMEN	Swab
CULTURE REPORT	Reported on 19.01.2021 (Received on 17.01.2021)
ORGANISMS ISOLATED	Staphylococcus aureus grown (Moderate growth).
ANTIBIOTIC SUSCEPTIBILITY BY AUTOMATED TURBIDIMETRIC METHOD	
CIPROFLOXACIN (CIP)	SENSITIVE (<=0.5)
CO-TRIMOXAZOLE	SENSITIVE (<=10.0)
CLINDAMYCIN (CLM)	SENSITIVE (0.25)
CEFOXITIN	NEGATIVE
ERYTHROMYCIN (E)	SENSITIVE (<=0.25)
GENTAMYCIN (G)	SENSITIVE (<=0.5)
LEVOFLOXACIN	SENSITIVE (0.25)
LINEZOLID	SENSITIVE (2.0)
PENICILLIN (P)	SENSITIVE (0.12)
VANCOMYCIN	SENSITIVE (1.0)
INDUCIBLE CLINDAMYCIN RESISTANCE	NEGATIVE
TETRACYCLINE	SENSITIVE (<=1.0)

Culture & Sensitivity report

3 Months Post OP

6 Months Post OP

12 Months post-OP

Conclusion

Due to its rarity in adults in distal tibia and ankle, which is insidious onset, non-specific presentation, and the absence of systemic symptoms, Brodie's abscess presents as a considerable diagnostic challenge, early diagnosis and prompt treatment helps in prevention of complications.

Acknowledgement

Not available

Author's Contribution

Not available

Conflict of Interest

Not available

Financial Support

Not available

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How to Cite This Article
Channappa TS, Shivakumar HB, Jayaram M, Yatish R, Harshitha S. Brodies abscess in distal tibia: A case report. International Journal of Orthopaedics Sciences 2023; 9(1): 487-492