Tubercular Synovitis in an Immunocompromised Patient

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Presented at EZAPICON (API Eastern Zone) on November 30, 2018

Introduction

- Tuberculosis is a major health problem in immunocompromised patients and involvement of appendicular skeleton is rare in tuberculosis.
- Tuberculosis may rarely result in synovitis. But the diagnosis may often be missed unless there is a high index of suspicion, especially when other usual evidences of tuberculosis, such as sputum positivity, chest x-ray findings etc. are absent.

Aim

- We report a case of tubercular synovitis in a 35 year old HIV infected male patient.
- Our aim is to highlight the fact that it is necessary to be aware of the possibility of tubercular synovitis in HIV patients presenting with joint swelling and pain and should maintain high index of suspicion to correctly diagnose the case.

Presentation

- The patient is a 35 year old male and a resident of Kolkata. He was admitted in our institution with swelling and pain in his left knee joint for last 3 weeks. He also had fever for last 4 days. He had no history of joint stiffness or restriction of joint movement.
- He was a known HIV patient receiving ART(TLE) for last 8 months. His last CD_4 count was done 2 months back and it was 67 at that time. He had been receiving cotrimoxazole prophylaxis since then. He was previously treated for extrapulmonary tuberculosis (lymph node) with CAT-I Anti Tubercular Drugs (ATD) which was completed 14 months back.
- He also had a past history of deep venous thrombosis and was on warfarin at the time of presentation.
- He was initially suspected to have septic arthritis had been treated with amoxicillin-clavulinic acid and linezolid for 7 days prior to the admission but the treatment was ineffective.

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Methods

- The patient was evaluated thoroughly after admission and necessary investigations including synovial fluid study was done. MRI of the involved joint could not be done due to financial reasons.

X-ray of left knee joint showing mild soft tissue swelling but no bony deformities

Examination / Initial Investigations

- On examination, left knee joint was swollen and fluctuation was present. It was tender to touch. The local temperature was also elevated.
- A lymph node was also found in the left axilla with a size of 2 cm × 1 cm.
- The x-ray of left knee joint did not show any bony deformity or joint erosion or loss of joint space. It only showed features suggestive of soft tissue swelling.
- Chest x-ray of the patient was normal. Mantoux test was negative.

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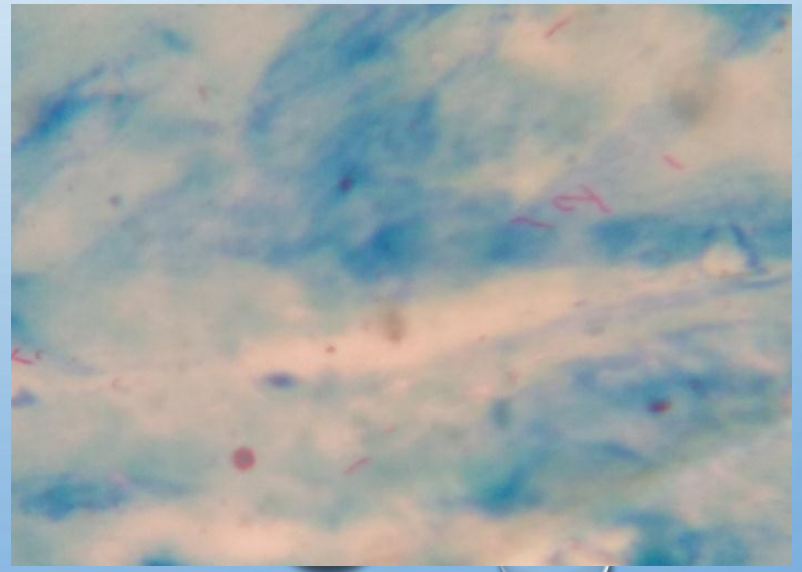
Special Investigations

- Synovial fluid was aspirated from the swollen left knee joint and sent for investigations. The fluid was straw colored. Gram stain and culture of the fluid sample did not reveal any pathology. Ziehl-Neelsen (ZN) staining of the synovial fluid sample was also done, but no acid fast bacilli (AFB) was detected. Cartridge Based Nucleic Acid Amplification (CBNAAT) test was done on the fluid sample. It was positive and was also detected as Rifampicin sensitive.
- A fine needle aspiration cytology was done from the palpable lymph node in the left axilla and AFB was detected in the ZN stain of the sample.

Management

- The patient was treated with CAT II anti-tubercular therapy along with ibuprofen to relieve pain.
- The patient responded to the treatment satisfactorily and is still under the management.



FNAC sample from left axillary lymph node showing acid fast bacilli

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Results

- Tubercular synovitis in this patient was established by positive CBNAAT in the synovial fluid.
- The FNAC sample from left axillary lymph node was positive for AFB which indicated disseminated tuberculosis.

Acknowledgements

- Director, School of Tropical Medicine, Kolkata, who has given us the privilege to report this case and finally the patient who has given us the opportunity to learn.

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Conclusion

- Immunocompromised patients have a higher risk of developing tuberculosis and it is also more severe. In India 87000 HIV associated TB patients emerge annually. India accounts for around 10% global burden of HIV associated with TB.[1]
- Globally around 15% of new and relapsing tuberculosis cases are extrapulmonary tuberculosis.[2] Bone and joint tuberculosis may account for up to 35% cases among these extrapulmonary tuberculosis cases. [3] But tubercular synovitis is uncommon among them and often poses a diagnostic challenge.
- A case presenting with signs of joint inflammation (monoarticular) with negative bacterial cultures should be suspected for tubercular synovitis.
- The Lowenstein-Jensen culture remains the gold standard, but it is complex, expensive and time consuming. Ziehl-Neelsen stain and fluoroscent microscopy has high specifity but low sensitivity. CBNAAT has both high sensitivity and high specificity and can also detect drug susceptibility. It has a very high positive predictive value (98-99%) for M. *tuberculosis* in extra-pulmonary clinical specimens. [4]
- To conclude the clinician should maintain a high index of suspicion to correctly diagnose tubercular synovitis.