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CASE REPORT ON- OSTEOMYELITIS WITH EWING'S SARCOMA

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ABSTRACT

Osteomyelitis is defined as an acquired inflammatory condition of a skeletal muscle. Ewings sarcoma is a type of tumor which consists of a certain type of cells in a bone or soft tissue and it may be formed in the bones of arms, legs and other areas of abdominal cavity. Typical clinical findings include tenderness over the infected bone, reduced motion in adjacent joints and local signs of inflammation and infection with systemic illness, including fever and lethargy. Our case mainly involved in differentiating the diagnosis of osteomyelitis with Ewing's sarcoma and they are both involved in the same typical signs and symptoms as they will be differentiated by the bone biopsy and MRI which is observed from the present case report. The following medications were given on admission: linezolid 10mg, amikacin sulfate 15mg, Syp. Ibugesic plus 5ml, inj. Pan 40mg, Syp. Ambroxyl 5ml and the same medication was followed for 7 days. After the patient has developed intermittent pain and swelling over the affected area which is observed from laboratory investigations then the patient had been diagnosed with ewings sarcoma. Patient has undergone wide local excision. Proper diagnosis is needed to provide accurate pharmacotherapy and to avoid progression of the disease.

KEYWORDS: Osteomyelitis, Ewing's sarcoma, MRI, biopsy.

INTRODUCTION

Osteomyelitis is defined as an acquired inflammatory condition of a skeletal muscle.[1] Ewings sarcoma is a type of tumor that forms from certain type of cells in a bone or soft

tissue and it may be formed in the bones of arms, legs and other areas of abdominal cavity.[2] The common symptoms of osteomyelitis may include pain, swelling in the affected area. Female are affected more than males.[3] Ewings sarcoma mainly affects the flat bones of pelvis and diaphysis mainly occurs at younger age and MRI is the important imaging technique for the assessment of bone distruction and to know the status of bone structure.[4] Typical clinical findings include tenderness over the infected bone, reduced motion in adjacent joints and local signs of inflammation and infection with systemic illness, including fever and lethargy.[5] The stages of osteomylitits may considered such as: Acute osteomyelitis develops within two weeks after trauma, subacute osteomyelitis develops within one to several months and chronic osteomyelitis will be developed after few months. The pathogenic organism for osteomyelitis may be considered according to the age of the patient as well as the clinical condition of patient. The main pathogenic organism for osteomyelitis is staphylococcus aureus which is responsible for majority of cases of acute osteomyelitis in children and diagnosis for Ewings sarcoma in children having similar history of swelling, pain, pathological fracture, fever which is associated with initial trauma.[6] The genetic sequence involved in the Ewing sarcoma breakpoint region 1 (EWSR1) 22q12 gene locus, with t(11;22), (q24;q12) gene fusion resulting in an EWSR1-FLI1 gene. In cases of localized bone pain which is usually associated with fever and enhanced inflammatory markers and osteomyelitis may be initially favored. To differentiate, Ewing's sarcoma may have an similar features with fever and increased inflammatory markers secondary to tumor necrosis. It should be considered as differential when a patient does not able to respond for antibiotic medication in case of osteomyelitis.[7] However, our study mainly involved in differentiating the diagnosis of osteomyelitis with Ewing's sarcoma and they are both involved in the same typical signs and symptoms as they will be differentiated by the bone biopsy and MRI which is observed from the present case report. Proper diagnosis should be needed to avoid progression of Ewing's sarcoma condition.

CASE PRESENTATION

A 22years old female patient was aligned to have a sustained injury due to hit by a bike and she developed pain in thigh region and she is unable to walk from 2 days. H/O cough since 2 days. The patient has been diagnosed with osteomyelitis, after one week again the patient has developed intermittent pain during the treatment period on hospitalization.

LABORATORY INVESTIGATIONS

1. Physical examination showed blood pressure-120/90 mmhg (normal value 120/80mmhg).
2. Complete blood picture showed normal levels of haemoglobin11.9gm/dl(11-14gm/dl), RBC-4.5millions/cumm(3.7-4.5mill/cumm),WBC-13,500cells/cumm(4000-11000cells/cumm).

Differential diagnosis

Lactate dehydrogenase biopsy and MRI results revealed the complete case which is shown in table 1. Patient has developed intermittent pain, swelling, increased fever at the infected area after one week of hospitalization. Correlating her orthopedic history and laboratory investigation the patient was found to be suffering from Osteomyelitis With Ewing's Sarcoma.

Table 1: Laboratory investigations to confirm the Ewing's sarcoma.

Parameter	Normal value	Reported value
LDH	465U/L	160-450U/L
ESR	10-15MM/HR	20MM/HR
Bone biopsy	Presence of staphylococcus aureus	
MRI-Bone	Presence of different nucleoids at the femur (confirmed as ewings sarcoma)	

TREATMENT

The following medications has been given on admission linezolid 10mg, amikacin sulfate 15mg, Syp. Ibugesic plus 5ml, inj. Pan 40mg, Syp. ambroxyl 5ml, the same medication followed for 7 days. After that the patient has developed intermittent pain and swelling over the affected area and with accordance of laboratory investigations the patient has been diagnosed as Ewing's sarcoma. The treatment was discontinued and the patient has undergone through the wide local excision which is a surgical procedure for removal of cancerous cells. The patient was relieved from symptoms of ewings sarcoma on day11th and the patient has been discharged.

DISCUSSION

The most common benign conditions that increases pediatric bone tumors on imaging is osteomyelitis. A previous history of trauma is common consideration for bone infections but the role of trauma in the pathogenesis of osteomyelitis in children is unpredictable. Clinical and laboratory findings, including fever, elevated erythrocyte rate and leukocytosis, are non-specific and these factors can even be increased or normal in some cases. Normal blood

cultures are positive in only 32-60% of cases. Culture of material biopsy from the affected area of bone can be negative in 45-60% of cases. The most common organism is Staphylococcus aureus, followed by Streptococcus pneumoniae, Escherichia coli.[8] The initial laboratory should at least consist of radiology and laboratory investigations may includes complete blood count, CRP, creatinine, calcium, albumin, alkaline phosphatase.

MRI is considered the main standard test for diagnosis, which should be followed by bone biopsy for culture which is main acquainted test for optimal antibiotic treatment as well as for histological analysis to rule out other prognostic diseases. Osteomyelitis is an infection disease may causes progressive bone destruction and can be infectious that may spread from adjacent soft tissue or joints, haematogenous spread and inoculation of microorganisms after trauma.[9] The person who is suffering with osteomyelitis had atypical findings because there was a large soft-tissue involvement that we thought it was a primary infectious condition but it may probably spread to bone as secondarily infection.[10] Our study mainly focuses on the importance of diagnosis of disease as the patient was suffering with initial symptoms trauma, swelling at the affected area, fever as both features will be present in osteomyelitis and Ewing's sarcoma. After seven days from initiation of treatment the patient has diagnosed with Ewing's sarcoma. proper diagnosis should be needed to provide accurate pharmacotherapy and to avoid progression of the disease.

CONCLUSION

The different types of undeviating clinical features appeared after the initial treatment. To relieve from the characteristic features of disease better understanding of the diagnostic approaches should be needed initially for improvement of health condition and to avoid the progression of disease. The purpose of the authors is to make well acquainted about the disease and its early diagnostic approaches.

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