International Journal of Research in Medical Sciences
Baskaran L et al. Int J Res Med Sci. 2020 Aug;8(8):3098-3101
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20203472

Case Report

Hip pain in children dilemmas in diagnosis and management a case report

Lakshmipriya Baskaran[1], Ashok Thudukuchi Ramanathan[2]*

[1]Department of Pediatrics, Shri Sathya Sai Medical college, Kancheepuram, Tamilnadu, India
[2]Department of Orthopaedics, SRIHER, Porur, Chennai, Tamilnadu, India

Received: 31 May 2020
Accepted: 30 June 2020

***Correspondence:**
Dr. Ashok Thudukuchi Ramanathan,
E-mail: trashok83@gmail.com

ABSTRACT

Atraumatic hip pain in growing children is of varied etiology from developmental to infection and tumor. Differential clinical presentation of symptoms and investigation modalities like blood parameters and radiological imaging remains inconclusive at times with differential diagnosis. Biopsy remains the final say in conclusive of establishing final diagnosis unless proved otherwise. Bony lytic lesion of proximal femur in children without systemic illness mimicking benign bone tumor initially (osteiod osteoma) turned out to be chronic osteomyelitis on histopathologically following CT guided biopsy of the lesion which alters the course of management.

Keywords: Biopsy, Chronic osteomyelitis, Magnetic resonance imaging, Osteoid osteoma

INTRODUCTION

Author would like to write up this case as of its atypical presenation for a benign bone tumor but proved otherwise, turned out to be chronic osteomyelitis of right proximal femur following CT guided biopsy.

Osteoid osteoma and chronic osteomyelitis of long bone, occurring closer to the joints behaves inadverently on clinical presentation altering the natural history and course of disease in all possible unexpected ways.[1] Radiological illustrations of bone lesion even with higher imaging like CT and MRI still requires additional understanding and skills on musculoskeletal sequencing for bone marrow edema illustration.[2-4] On such situations, second opinion from another surgeon might be controversial and could still be biased either with individual own experiences as differential diagnosis leads to differential conclusions.[5-7] Histological analysis of bony lesion, whether a nidus or sequestrum remains mainstay in decision making and justifies the line of management without subjective errors and prevents potential litigations in the future.[8-10]

Biopsy, stays a gold standard in decision making on dealing with long bone lesions of paediatric population, to be surprised or not to be on a clinicians thought process and future awaited outcome.[11,12]

CASE REPORT

This 11-year-old female child coming form Kolkata, accompanied by her mother and uncle visited SRIHER Orthopaedic outpatient department on tuesday by october 2019 with complaints of right proximal hip and thigh pain of atraumatic nature and difficulty in walking with limp for past six months. She was apparently normal six months back, pain was insidious in onset, dullaching, progressive, aggravated with walking relieved by rest and analgesics on and off. History of weight loss and appetite present. No night cries. No other musculoskeletal issues. Menarche not attained. No history of comorbids. Birth,

developmental and immunisation history is appropriate for present age. Treatment history - on and off with analgesics at her native place and multiple different consultations for same complaints from general practitioners present.

On examination - conscious, oriented, thin built and afebrile, No pallor, icteric, cyanosis, koilonychia, lymphadenopathy and pedal edema. Local examination - No warmth and swelling, skin over right hip and pelvis on all sides normal. No sinus/discharge. Pain over anterior aspect of right hip and proximal thigh, no bony irregularity, femoral pulsation present, active leg raising present, muscle wasting present. Range of movement - right hip terminal restriction on all planes on flexion and extension present. Right Knee and ankle - clinically normal, No neurovascular involvement. Spine and left lower limb clinically normal.

X-ray - Right proximal femur lytic lesion with cortical thickening at inferior aspect of neck. (Figure 1). Blood values - Hb - 11.7gms%, TC-12,500 cells/cu.mm, ESR-12mm/hr, CRP- <0.1, Platelet count - 2.76lakhs, RA factor<20.0, ASO titre - 39.2, Uric acid -3.6, Calcium - 10.5, Alkaline phosphate - 161, PTH - 19.6, Vit D(25OH)- 18.6ng/ml.

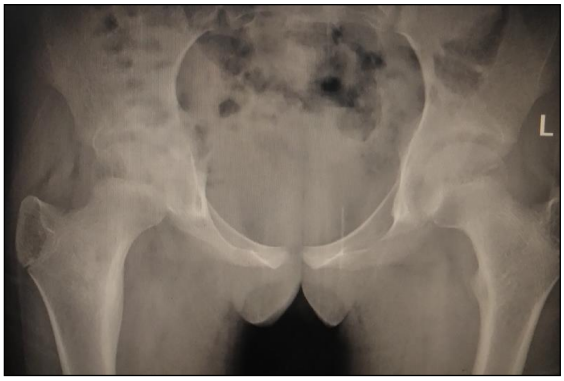

Figure 1: First x-ray.

Paediatric evaluation of the child was performed for malnutrition and systemic illness. During the course of evaluation, child developed one episode of fever, following which serological profiles for dengue and typhoid was carried out which was negative, tuberculosois screening also negative. Higher imaging with MRI was done and reported possibilities of differential pathologies at the same site (Figure 2). CT guided biopsy of the lesion was planned on 15/10/2019 (Figure 3).

Biopsy - features suggestive of chronic osteomyelitis (SS-3510/2019). No evidence of granuloma or malignancy.

Patient was started on oral antibiotics tablet Linezolid for six weeks after consulting with infection specialist based on biopsy reports. Patient came for review on December 2019, without any symptoms and pain free walking, weight bearing on right hip remains asymptomatic.

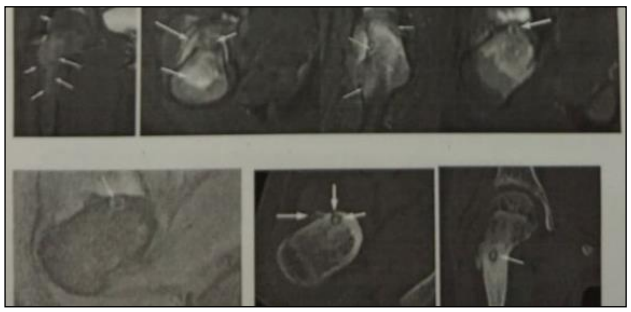

Figure 2: MRI right hip with proximal femur.

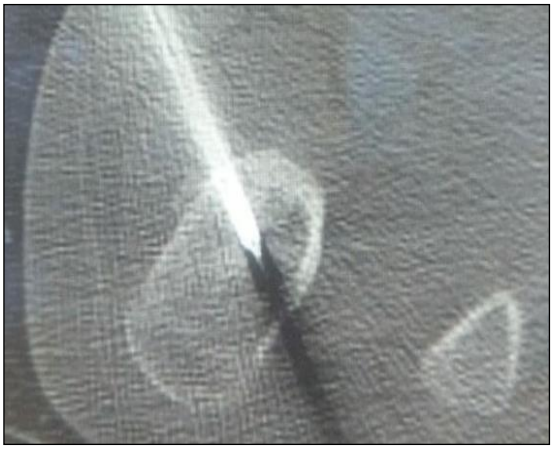

Figure 3: CT guided biopsy on 15/10/2019.

Figure 4: December 2019 Post biopsy and oral antibiotic theraphy.

Blood values were repeated for infective parameters, found reduced considerably when compared with previous reports. X-ray was repeated showing consolidation of lesion and improvement of bone density, (Figure 4), antibiotic was discontinued after discussing with infection specialist. Next had telephonic followup by February 2020 of her condition being better and doing well. Always counselled the parents regarding regular

observations and followup for atleast ten months to monitor the course of the pathogenesis and variations in future for timely intervention, if necessary.

DISCUSSION

Non traumatic causes of hip pain in children is of multifactorial involvement to start with from clinical presentation to blood parameters and radiological findings. In this case, child was initially diagnosed of right hip synovitis with added blood infective parameters were inconclusive for presentation.

Simple X-ray revealed a lytic lesion of right proximal femur. Osteoid osteoma, most common benign osteogenic tumor of lowerlimbs with 25% involving proximal femur, neck and lesser trochanter areas were the most common sites.[1]

Although CT is helpful in the diagnosis of osteoid osteoma, patients in whom the clinical presentation of the tumor is atypical were advised for MRI hip with pelvis screening. Radiologist with improvised skills on musculoskeletal imaging and their sequence will be of great help in addressing the lesion.

Half-moon sign is an MRI finding that is highly specific and sensitive for an accurate diagnosis of osteoid osteoma of the femoral neck.[2,3] However, management of osteoid osteoma remains invasive by techniques like radiofrequency ablation or PRBD with promising results till date.[4,5] On contrary, two literature evidence with missed osteoid osteoma with similar presenta- tion were infection / lesser trochanter apophysitis was kept as first diagnosis, but limitation in both was elderly age, high demanding activity, weightage for CT and MRI, but biopsy of lesion not emphasized.[6,7]

In this study, during due course of evaluation, child developed an episode of fever which further necessitated to rule out infection at first hand and other systemic illne.[10] Infective causes of atraumatic hip pain is an array of infective differential diagnosis perse like synovitis, septic arthritis, sclerosis osteomyelitis of proximal femur or a malignant tumor (ewings /osteosarcoma) mimicking like infection.[8,9]

In this case report, atypical presentation, longer duration of illness, acute fever onset were the key factors sustaining with infection besides with classical radiological tumor like appearance.

Limitations in this study was, MRI preferred over CT as of infective etiology and tissue diagnosis by CT guided biopsy given more weightage for conclusion besides radiological recommendations. On contrary, suspected infection with no evidence of growth in any culture sample later turned out be an osteosarcoma proven histopathologicaly Pan et al, describes, a mean delay in diagnosing osteosarcoma was around 17 weeks.[11,12]

CONCLUSION

- CT scan plays a vital role in diagnosing osteoid osteoma.
- Atypical presentation with added non correlating blood values with clinical findings and radiological appearance, needs guided team approach involving oncologist, radiologist and pathologist for further planning.
- Biopsy stands mandatory to be histopathologically evident for supporting final diagnosis.
- Infections with chronic history of duration to be watched on for malignancy in growing bones.

Classification or grading for atypical, nontraumatic hip pain in growing bones on a numerical scoring scale inclusive of factors like Host related (age, site, chronicity of disease and illness, limp), blood or joint fluid related (infective parameters), Image related (lesion, type, number, location on xray/CT/MRI) and finally Tissue related (biopsy) might provide a magnified version of present etiopathogenesis and its sequelae to be preventive and watchful on unexpected disasters in the future.

Background scope for future areas of research

- Bone marrow edema (BME) or bone lesion which signifies what on all higher imaging sequence.
- Nidus or Sequestrum - histological comparison of both and its importance in diagnosis and evolution.
- Infection or Organism associated malignancy - New terminologies and concepts for exploration.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Campanacci M. Osteoid osteoma. Bone soft tissue tumors. New York: Springer. 1990:355-73.
2. Gaeta M, Minutoli F, Pandolfo I, Vinci S, D'Andrea L, Blandino A. MRI findings in osteoid osteoma of neck of femur. Eur Radiol. 2004 Sep;14(9).
3. Klontzas ME, Zibis AH, Karantanas AH. Osteoid osteoma of femoral neck - Use of half moon sign in MRI diagnosis. AJR Am J Roentgenol. 2015 Aug; 205(2):353-7.
4. Earhart J, Wellman D, Donaldson J, Chesterton J, King E, Janicki JA. Radiofrequency ablation in treatment of osteoid osteoma results and complications. Pediatr Radiol. 2013 Jul;43(7):814-9.
5. Raux S, Abelin-Genevois K, Canterino I, Chotel F, Kohler R. Osteoid osteoma of proximal femur treated with PBRD. Orthop Traumatol Surg Res. 2014 Oct;100(6):641-5.
6. Ly JA, Coleman EM, Cohen GS, Kropf EJ. Unrecognised osteoid osteoma of proximl femur associ- ated with cam impingement. J Hip Preserv Surg. 2016 Jun 1;3(3):236-7.

7. Samland M, Ullrich S, Petersen TO, Roth A. Case of unrecognised osteoid osteoma of proximal femur. Radiol Case Rep. 2020 Apr 8;15(6)722-6.
8. Schwarzkopf E, Agaram NP, Ha S, Prince DE. Chronic recurrent multifocal osteomyelitis - case report to two patients and review of literature. Int J Clin Rheumtol. 2019;14(1):24-30.
9. Kiepurska A. Chir Narzadow Ruchu. Sclerosing osteomyelitis of proximal femur in children an adolescents. Ortop Pol. 1994;59(4):285-93.
10. Hammond PJ, Macnicol MF. Osteomyelitis of pelvis and proximal femur: diagnostic difficulties. J Pediatr Orthop B. 2001 Apr;10(2):113-9.
11. Umrani S, Al-Mufargi Y. Osteosarcoma of proximal femur mimicking septic arthritis of hip : diagnostic dilemma.Sultan Qaboos Univ Med J. 2018 Nov;18(4):e545-8.
12. Pan KL, Chan WH, Chia YY. Initial symptoms and delayed diagnosis of osteosarcoma around the knee joint. J Orthop Surg (Hong Kong). 2010;18:55-7.

Cite this article as: Baskaran L, Ramanathan AT. Hip pain in children dilemmas in diagnosis and management a case report. Int J Res Med Sci 2020;8:3098-101.