

Case Report

Monostotic fibrous dysplasia of fibula: a rare case report

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ABSTRACT

Fibrous dysplasia is a developmental anomaly of bone formation that may exist in monostotic or polyostotic form. Monostotic fibrous dysplasia of fibula is a rare case with unusual site and most common sites being facial bones, ribs, proximal femur and tibia. We report a case of 10-year-old boy attended our hospital with occasional pain in left leg while having strenuous activity. On clinical examination there was no obvious swelling with normal appearing skin. Radiographic examination revealed lesion with both radiopaque and radiolucent features showing a “ground-glass” appearing lesion in proximal one third of fibula. Differential diagnosis considered are simple bone cyst, non-ossifying fibroma, osteo-fibrous dysplasia, adamantinoma. As a definitive treatment curettage was done and biopsy sent for histopathological examination, which confirmed the diagnosis. Follow up after 10 months shows normal bone growth as evidenced radiologically and patient is asymptomatic. Case in detail and recent review of literature has been discussed. From our case, we have shown that it is possible to treat uncomplicated fibrous dysplasia with minimally invasive approach of simple curettage. Patient is symptomatically relieved within 2 months without any complications.

Keywords: Fibrous dysplasia, Ground-glass, Radiographic examination

INTRODUCTION

Fibrous dysplasia is rare nonmalignant condition in which bone and marrow replaced by fibrous tissue and randomly distributed woven bone, usually with pain, bone deformity, and pathological fractures.¹ Fibrous dysplasia presents in three forms-monostotic, polyostotic, and polyostotic with endocrinological disorders and is called McCune-Albright syndrome.² It accounts for 5-7% of all bone tumors.³ Approximately 30% of monostotic fibrous dysplasia lesions are found in teenagers, and is usually becomes static after adulthood.⁴ Majority of cases are asymptomatic lesions that are identified incidentally and managed conservatively by patient education and observation.¹ However, surgical intervention is required for mild cases with symptoms for long duration, for correction of deformities and to prevent pathological fractures.⁵

CASE REPORT

A 10-year-old boy attended to our hospital with non-specific symptoms of occasional pain in left leg while playing and prolong walking for 1 month, there was no obvious swelling and other constitutional symptoms, no history of preceding trauma. On local examination, there was bony irregularity in the proximal third of left fibula, which was tender on deep palpation, soft tissue surrounding it was normal. Knee and ankle movements are within normal limit both active and passive and painless, there was no footdrop.

Radiological examination of plain X-ray revealed lesion with both radiopaque and radiolucent features showing a “ground-glass” appearing Lesion in proximal one third of fibula (Figure 1). NCCT of knee revealed centrally placed expansive osteolytic Lesion measuring (1.39×1.13 cm)

with thinning and focal breach of overlying cortex without any periosteal reaction suggestive of fibrous dysplasia (Figure 2A and B). Skeletal survey was done to look for lesions in other sites, and there were no such lesions.



Figure 1: Osteolytic lesion in the proximal third of left fibula.

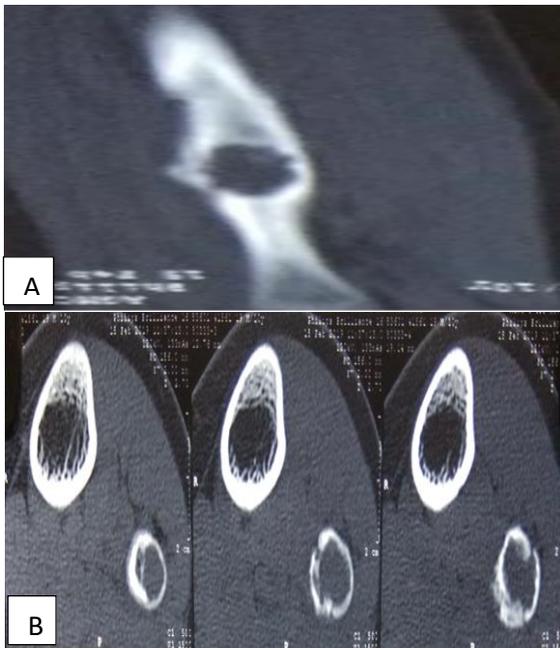


Figure 2: (A) NCCT in sagittal axis and (B) transverse axis showing focal breach in cortex.



Figure 3: Intra-operative picture following curettage.

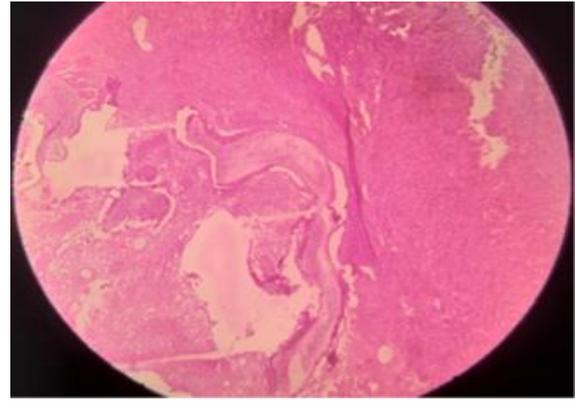


Figure 4: Histopathological picture of the lesion.

Patient was posted for surgery, lesion exposed through lateral approach, curettage and lavage was done to remove fibrous dysplastic tissue, (Figure 3), no bone graft was used. Sample of the tissue were sent to pathology department for histological analysis, which confirmed the diagnosis of fibrous dysplasia (Figure 4). Both intra and post-operative was uneventful, short course of antibiotics and analgesics were prescribed. Limb was immobilized in below knee plaster for 3 weeks. Full weight bearing was restricted for 3 weeks due to pain, and was encouraged for non-strenuous activities for a month.

After two months of follow up patient had no symptoms, adjacent joint movements were normal, radiography revealed callus formation at the site of lesion with normal looking bone (Figure 5).



Figure 5: Post-operative follow up after 2 months.

DISCUSSION

Fibrous dysplasia is uncommon, but well-known skeletal disorder, which is considered to be a pathological condition as a result of development failure in the remodeling of immature bone to mature lamellar bone and of inappropriate realignment in response to mechanical stress. The disorder of bone maturation leaves a mass of immature trabeculae (woven bone) in dysplastic fibrous tissue.⁶ Usually the disease arises in the first three decades of life and stabilizes when patients reach skeletal maturity.⁷ Currently there is no medical management for fibrous

dysplasia. Medical management of fibrous dysplasia by alendronate in a randomized, double blind, placebo-controlled trial by Boyce et al showed reduction in the bone resorption marker NTX-telopeptides, and improvement in a BMD, but no significant effect on serum osteocalcin, pain, or functional parameters.⁸ In reviewing the literature on fibrous dysplasia of isolated lesion, surgical management with curettage and lavage with autologous bone graft with or without internal fixation and osteotomy has been used for fibrous dysplasia of femoral neck in a study by Tong et al.⁹ But there are not many studies available for treatment of fibrous dysplasia of fibula, since the lesion is small bone graft is not used in our case. Our follow-up period is not sufficient to comment on recurrence.

CONCLUSION

There is no standard treatment protocol available for fibrous dysplasia of long bones, medical management is not much beneficial, but early intervention with minimal invasive surgery by curettage and lavage with or without autologous bone graft and internal fixation if necessary, will provide symptomatic relief and to prevent further deformity.

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REFERENCES

1. Dicaprio MR, Enneking WF. Fibrous dysplasia. Patho physiology, evaluation, and treatment. J Bone Joint

- Surg Am. 2005;87:1848-64.
2. MacDonald-Jankowski D. Fibrous dysplasia: A systematic review. Dentomaxillofac Radiol. 2009;38:196-215.
 3. Campanacci M. Bone and soft tissue tumors: clinical features, imaging, pathology and treatment. New York: Springer science and Business Media. 1990.
 4. De Melo WM, Sonora CK, Hochuli-Vieira E. Monostotic fibrous dysplasia of the mandible. Craniofac Surg. 2012;23:e454.
 5. Nishita Y, Tsukushi S, Hosono K, Nakashima H, Yamaha Y, Urakawa H et al. Surgical treatment for fibrous dysplasia of femoral neck with mild but prolonged symptoms: a case series. J Orthop Surg Res. 2015;110:63.
 6. Enneking WF, Rathe R, Cornwall G. Clinical musculoskeletal pathology. Office of Medical Informatics at the university of Florida. 1998.
 7. Menon S, Venkatswamy S, Ramu V, Banu K, Sham E, Kashyap VM. Craniofacial dysplasia: literature review. Ann Maxillofac Surg. 2013;3:66-71.
 8. Boyce AM, Brillante MBHA, Kushner H, Wientroub S, Riminucci M, Bianca P, et al. A randomized, double blind, placebo-controlled trail of alendronate treatment for fibrous dysplasia of bone. J Clin Endocrinol Metab. 2014;99(11):4133-40.
 9. Tong Z, Zhang W, Jiao N, Wang K, Chen BO, Yang T. Surgical treatment of fibrous dysplasia in proximal femur. Exp Ther Med. 2013;5(5):1355-8.

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