IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 19, Issue 6 Ser.3 (June. 2020), PP 17-20
www.iosrjournals.org

Ossifying Fibroma of Distal Fibula managed With En block resection andPrimary Tibiotalar Arthrodesis using Charnley'scompression Clamps.

Anand Reddy Baddula, RadhakrishnaRapaka, PreethamNimma
Department of Orthopaedics, Gandhi Medical College, secunderabad.

Abstract: *Ossifying Fibroma, atumour rarely found in long bones and never reported in lower end of Fibula as in this case and when left it grew to large size compared to the thin profile of Fibula. En-block resection done and the unstable ankle addressed with Primary TibioTalarArthodesis using Charnley's compression clamps. This method provided stable joint avoiding donor site morbidity instead of using proximal Fibula or Iliac bone graft with acceptable range of movements.*

Date of Submission: 20-05-2020 Date of Acceptance: 06-06-2020

I. Introduction

Ossifying Fibroma is a rare benign bone tumour seen by Orthopaedic Surgeons and extremely rare in Distal Fibula.[1] It is most commonly seen in Maxillo facial region and Tibia, and mostly confused with Mono Ostotic Fibrous Dysplasia but histologically differs with having predominant fibrous woven lamelle[1,2,3] , Adamantinomais another entity need to be differentiated from Ossifying Fibroma[2,3]. Over all Fibula is less common site for primary tumours of which proximal Fibula is predominant site, rather than rest of the Fibula [4].

Ankle arthrodesis is a common treatment used for patients with end-stage ankle arthritis either Primary or post traumatic, where conservative treatment has failed. The surgical goal of ankle arthrodesis is to obtain bony union between the tibia and talus with adequate alignment slight valgus (0°-5°), neutral dorsiflexion, and mild external rotation in order to provide a pain-free plantigrade foot for weightbearing activities.[5]. The mode of achieving union may be with internal fixation or external fixation, here in this case we used traditional Charnley's compression clamps for Arthrodesis.

II. Case Report:

This is a case of female manual Labourer, presented with swelling measuring about 12 x 8 x 6 cms for past 30 years, with a non-healing ulcer of 2 cmx 2 cm [fig1], over superolateral aspect of the swelling which she developed following injury 3 weeks ago, ulcer didn't show any signs of healing owing to stretched and poor vascularity of the skin over the swelling. She developed swelling at the age of 20 which was lemon size initially and gradually progressed to present size, not associated with pain, no restriction of movements, however she is having difficulty in sitting cross legged on floor, and had recurrent minor trauma to the swelling owing to its size and location, no recent increase in size, no engorged veins. The swelling is firm to hard, smooth lobulatedandnon-tender with no local rise of temperature and found to be in continuation with fibula. Lateral malleoli cannot be distinguished. Skin over the swelling is pinchable, distal neurovascular status is intact.

Patient was evaluated with X rays [fig 2] of left ankle anteroposterior and lateral views, showing a large well defined Osteolytic lesion involving Epiphiseometaphyseal region extending into shaft of lower third Fibula with clear zone of transition.CT scan [fig 3] showed lobulated lytic lesion with multiple thick internal trabuculations with ground glass matrix and zone of transition, MRI scanning [fig 4] suggested anIso intense on T1W, mixed signal intensity on T2W, with peripheral T2W iso intensity and hyper intensity on STIR and no involvement of surrounding soft tissue and no involvement of neurovascular structures.Imaging didn'trevealany signs suggestive of malignant changes.

Under regionalAnaesthesiaTumouraccessed with direct lateral approach, skin flapalong with ulcer necessary for closureleft to the tumor, normal bone resected 1 cm proximal to thetumour to ensure complete removal [fig 5].Unstable ankle addressed using Charnley's compression clamps with proximal pin into shaft of the Tibia and distal pin into Talus after removing the cartilage from both the articular surfaces [fig 6]. Intra operative and post-operative period was uneventful. Clamps removed after achieving bony union between Talus and Tibia [fig 6], till then she was kept on strict non weight bearing. Later patient was started partial weight bearing initially in a boot cast and mobilized with full weightbearing after removing the cast. Patient could able

to do 15^0 of dorsiflexion and 30^0 of plantar flexion compared to 12^0 of dorsiflexion and 20^0 plantar flexion necessary for normal gait.

Histopathology [fig 7] showedinterlacing bundles of polygonal to spindle cells containing coarse fibrillary cytoplasm and oval to plump to elongated vesicular nucleus. There is only mild nuclear pleomorphismwithout significant mitotic activity. There are many spherical bluish osteoid and bluish woven bone of varying sizes with focal Osteoblastic lining. Features infavour of *OSSIFYING FIBROMA*.

III. Discussion:

Ossifying Fibroma is a rare tumour found in long bones and never reported in lower end of Fibula as in this case and when left it grew to large size compared to the thin profile of Fibula. En-block resection done and the unstable ankle addressed with Primary Tibio-talarArthodesis. Other alternatives were reconstruction of the joint using proximal Fibula [6], resection withoutreconsruction using braces was done in children [7], or using peroneus brevistenodesed to the distal tibia.[8], or using Tricortical Iliac bone graft[9]. But most of the above procedures need another incision and donor site morbidity and can be tried in young individuals and take time for the results, this patient is a middle aged manual labourer and need to get back to work quickly and need a stable joint with acceptable range of movements, hence proceded with primary Arthrodesis

IV. Conclusion:

Ossifying Fibroma, a rare benign tumor and occurring in Distal fibula is exceedingly rare, though asymptomatic for prolonged duration, non-healing ulcer became troublesome for the patient and hence proceeded for Enblock resection and in order to give stable joint Primary Arthrodesis of Tibio-taral joint was opted. Patient was followed for one year with no signs of recurrence or Instability while able to perform heavy work. Hence after resection of lateral malleolus primary Arthrodesis gives encouraging results and can be a viable option in elderly and manual workers.

Figure 1 Clinical picture at the time of presentation with an ulcer over the swelling.

Figure 2 X-rays showing large well definedlobulated lytic lesion with clear zone of transition.

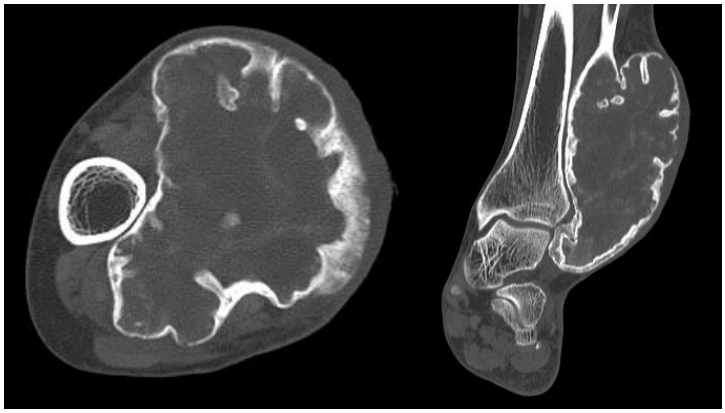

Figure 3 CT images

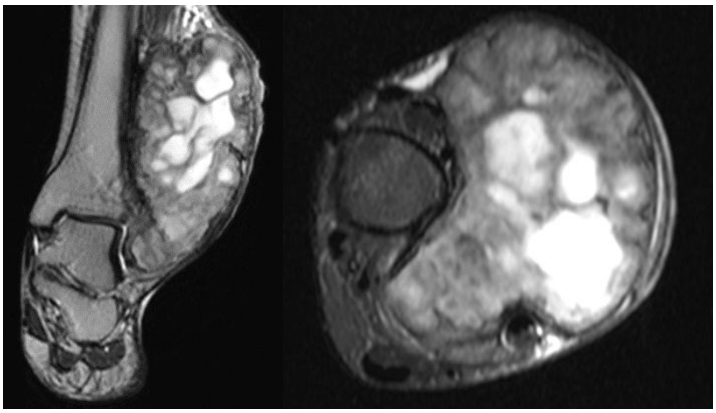

Figure 4 MRI images

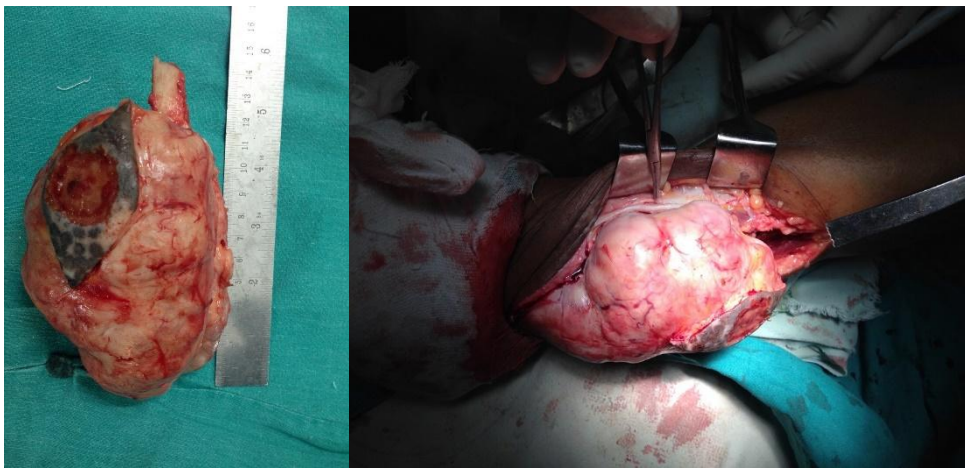

Figure 5. Resected specimen and intra op pictures

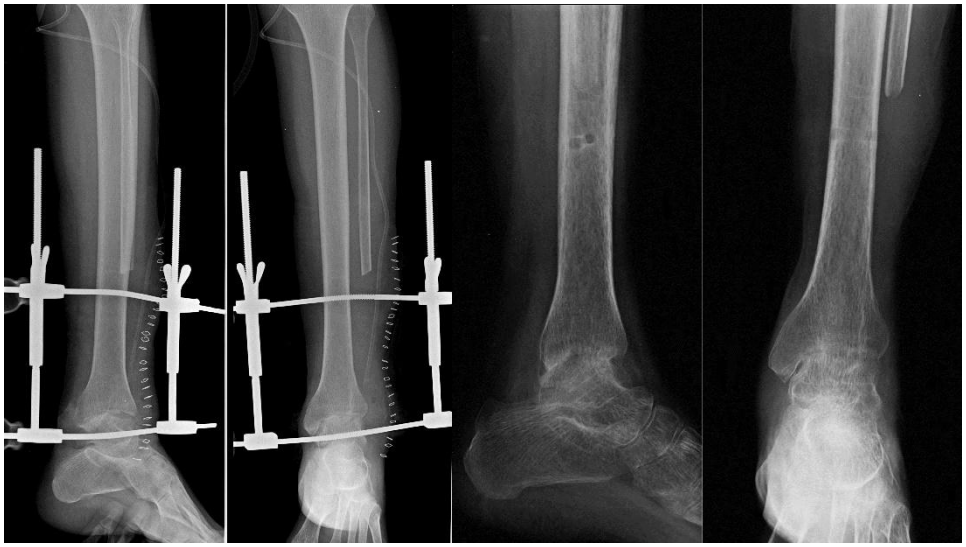

Figure 6 Immediate post op X-ray and twomonthspost-operative X-ray showing fusion between tibiotaral joint

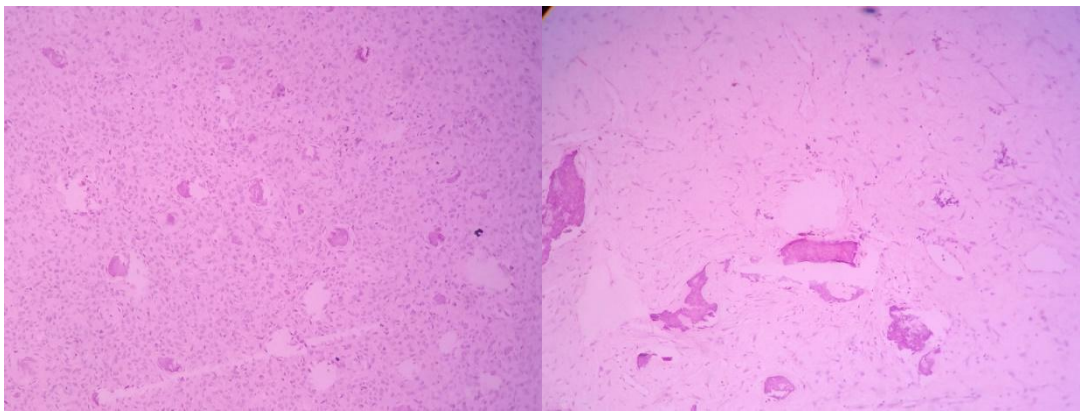

Figure 7 Histopathology showingmany spherical bluish osteoid and bluish woven bone of varying sizes with focal Osteoblastic lining.

References

[1]. Goergen TG, Dickman PS, Resnick D, Saltzstein SL, O'Dell CW, Akeson WH. Long bone ossifying fibromas. *Cancer*. 1977;39(5):2067-2072. doi:10.1002/1097-0142(197705)39:5<2067::aid-cncr2820390524>3.0.co;2-4

[2]. Nakashima Y, Yamamuro T, Fujiwara Y, Kotoura Y, Mori E, Hamashima Y. Osteofibrous dysplasia (ossifying fibroma of long bones). A study of 12 cases. *Cancer*. 1983;52(5):909-914. doi:10.1002/1097-0142(19830901)52:5<909::aid-cncr2820520528>3.0.co;2-#

[3]. Goergen TG, Dickman PS, Resnick D, Saltzstein SL, O'Dell CW, Akeson WH. Long bone ossifying fibromas. *Cancer*. 1977;39(5):2067-2072. doi:10.1002/1097-0142(197705)39:5<2067::aid-cncr2820390524>3.0.co;2-4

[4]. Puri A, Agarwal MG. Current concepts in bone and soft tissue tumours. (chapter 6):53–54.

[5]. Yasui Y, Hannon CP, Seow D, Kennedy JG. Ankle arthrodesis: A systematic approach and review of the literature. *World J Orthop*. 2016;7(11):700-708. Published 2016 Nov 18. doi:10.5312/wjo.v7.i11.700

[6]. Nadkarni S, Punit AS, Nair RV. Giant Cell Tumour of Distal Fibula Managed by En Block Resection and Reconstruction with Ipsilateral Proximal Fibula. *J Orthop Case Rep*. 2015;5(1):52-54. doi:10.13107/jocr.2250-0685.255

[7]. Vaishya R, Kapoor C, Golwala P, Agarwal AK, Vijay V. A Rare Giant Cell Tumor of the Distal Fibula and its Management. *Cureus*. 2016;8(7):e666. Published 2016 Jul 1. doi:10.7759/cureus.666

[8]. Monson DK, Vojdani S, Dean TJ, Louis-Ugbo J. Lateral ankle stabilization after distal fibular resection using a novel approach: a surgical technique. *ClinOrthopRelat Res*. 2014;472(4):1262-1270. doi:10.1007/s11999-013-3408-6

[9]. Eger W, Schörle C, Zeiler G. Giant cell tumor of the distal fibula: fifteen-year result after en bloc resection and fibula reconstruction. *Arch Orthop Trauma Surg*. 2004;124(1):56-59. doi:10.1007/s00402-003-0562-4

Anand Reddy Baddula. "Ossifying Fibroma of Distal Fibula managed with En block resection and Primary Tibiotalar Arthrodesis using Charnley'sCompression Clamps." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 19(6), 2020, pp. 17-20.