

Incidental Idiopathic Proximal Tibial Distal Fibular Synostosis: An Unusual Case Report

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ABSTRACT

Tibiofibular Synostosis is one of the rare causes of pain in the knee joint. Conservative treatment is the recommended treatment of choice. A 30-year-old male footballer came to our clinic complaining of knee joint pain, with no history of trauma. Pain is increasing on walking, no abnormality was detected, but a marginal increase in the girth of the left calf muscle compared to the contralateral right side. Imaging results revealed Proximal Tibial-Distal Fibular Synostosis.

Keywords: Distal fibula; Proximal Tibia; Synostosis.

INTRODUCTION

Tibiofibular Synostosis is one of the rare causes of pain in the knee joint. Conservative treatment is the recommended treatment of choice. We were presented with unusual causes for a 30-year-old male football player who came to our clinic complaining of knee joint pain. The pain had started three days back while playing football with no history of trauma.

Pain increases on walking. On physical examination, no abnormality was detected, but there is a marginal increase in the girth of the left calf muscle compared to the contralateral side. Imaging results revealed Proximal Tibial-Distal Fibular Synostosis.

CASE REPORT

A 30-year-old male football player presented to the clinic

with pain in the left knee joint for the last 3 days, while playing football. The patient didn't give a history of trauma. Pain increases while walking. On physical examination, no abnormality was detected, but there is a marginal increase in the girth of the left calf muscle compared to the right side. The patient has the full range of motion in the knee and ankle joint, all active and passive motion were preserved and they are within the normal limit. No, neurological deficit was found, the leg length was equal, and no valgus or varus deformity was noted. There was no tenderness, no crepitation, or numbness and the local temperature was not raised. The muscle bulk of the lower legs was normally in both legs with equal power. Distal nerve-vascular status was intact.

A radiograph of the left leg was done and revealed an incidental finding of a long segment obliquely oriented Proximal 3rd of the Tibia and Distal 3rd fibular synostosis (Fig. 1).



Figure 1: Curvilinear inter osseous bridging the lateral upper 3rd surface

The above diagram shows Meta Diaphysis Region of the tibia and the medial lower half of the upper 3rd segment of the fibula in limited views of the skiagram.



Figure 2 : Radiography of right leg

DISCUSSION

Synostosis of the proximal tibiofibular joint is extremely rare and is associated with multiple hereditary osteochondromatosis.¹ Generally, iatrogenic distal tibiofibular synostosis occurs due to tibial fracture, nailing, or osteotomy^{2,3,5} and proximal tibiofibular synostosis is rare and may be either congenital or associated with trauma.^{1,6,7}

Synostosis generally occurs in three levels between the tibia and fibula. The first is Distal tibiofibular joint synostosis generally associated with trauma and is a late complication of ankle fracture.⁸ The second middle tibiofibular synostosis is formed by the interosseous membrane between the proximal and distal tibiofibular joint and generally, synostosis of this joint is also

associated with trauma.⁹ The third proximal tibiofibular joint synostosis is generally associated with growth deformities, exostoses, chromosomal anomalies, and valgus deformities. Congenital synostosis may be due to intrauterine trauma, infection, focal inflammations, or due to joint cavitations.¹²

On conventional and advanced imaging synostosis appears as a bony bridge connecting the two bones with or without deformity.¹³ X-ray skiagram does have a role in neoplastic, and non-neoplastic entities, given the classical characteristic locations as described in the literature, one can narrow down these possible differentials.^{14,15,16} However, in this case, it's not fitting into either the hereditary or non-neoplastic entities. As per the description of findings stated earlier in the article. No obvious periosteal reactions were noted. In our case, the patients had no history of trauma or surgery, nor any history of prolonged durations of progressive deformity, which is indeed unique and contrary to most of the prior documented publications of trauma, surgery, and prolonged duration of progressive deformity.¹³ There are very few isolated case reports of congenital distal tibiofibular synostosis.¹⁶ As per published reports, it is estimated that the incidence of a tibial stress fracture is 18.9% to 63% of all fractures in athletes. Most tibial stress fractures are associated with running, jogging, and track activities.^{18,19} Particularly among athletes many articles for proximal and distal tibiofibular synostosis were common after the fracture and ankle sprain mostly in skeletally mature patients. Proximal TFS is extremely rare. Rahm reported the first case of proximal TFS in 1924 in 43-year-old females and is asymptomatic. Most of the proximal TFS is asymptomatic and is incidentally found during routine radiography. Similarly in this case was found incidentally when radiography was done. Most of the reported literature for proximal TFS developed before the closure of the growth plate or congenitally.^{1,6,11, 21,22}

In literature search for various treatment modalities for these conditions shows that synostosis usually does not require treatment, if the ankle joint has good motions.^{6, 23,24,25} As long as the patient is asymptomatic no need for surgical interventions. Same as our patients treated conservatively and at present patient does not have any pain and now is having a normal physical life.

CONCLUSION

To the best of our knowledge, we could not find any literature suggesting synostosis between two long bones at a different Meta Diaphyseal level (in our case- proximal 3rd meta diaphyseal of tibia and inferior 3rd meta diaphyseal of fibula).

Most of the articles suggest synostosis at the same level (proximal or distal) but in our cases, the synostosis is a long segment and secondly at a different level, with no obvious trauma.

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