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RESEARCH ARTICLE

LOCALIZED GIANT CELL TUMORS ARISING FROM THE POSTERIOR CRUCIATE LIGAMENT. A CASE REPORT.

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Abstract

The localized form of giant cell tumor of tendon sheaths, also known as tenosynovial giant cell tumor, predominantly involves the fingers, which is rarely intraarticular in large joints like the hip, knee and the ankle. In the present study, the authors present a rare case of a surgically treated intra-articular giant cell tumor of tendon sheaths arising from posterior cruciate ligament (PCL) of a 33-year-old man, by reviewing the literature.

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Introduction:-

Tenosynovial Giant cell tumor, first described by Jaffe et al in 1941, is also known as pigmented villonodular synovitis [1]. These tumors predominantly involve the palmar side of fingers and toes, and seldomly larger joints like the knees and ankles [2].

In this study, we report a very rare case of surgically treated intra-articular GCT arising from tibial attachment of the posterior cruciate ligament (PCL) of the knee, by reviewing the literature.

Case Report:-

A 33-year-old man presented to us with complaints of swelling and pain increasing with activity in his right knee. The patient had no pain at rest and any prior history of trauma.

On clinical examination there was a deep swelling that appeared during flexion at the popliteal region of the right knee. Knee range of motion was equal and comparable to the normal side. No abnormal findings were found at the X-ray.

Magnetic resonance imaging (MRI) revealed a well-circumscribed popliteal mass that was closely related to the PCL measuring 35 × 22 × 33 mm sized. The lesion was hypointense on T1-weighted images and hyperintense on T2-weighted images. The mass was closely abutted the medial femoral condyle and the internal meniscus but it did not involve the popliteal neurovascular bundle (Fig. 1a, b, c).

The Trickey incision was made at the popliteal region of the right knee in the supine position under spinal anesthesia under tourniquet. After reaching the joint capsule, the lesion was reached by longitudinal arthrotomy. The lesion was

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excised marginally (Fig. 2 a, b, c). Giant cell tenosynovial tumor was diagnosed at the histopathological examination.

Functional rehabilitation was started the day after the surgery. The patient had no further complaints following the operation, and there was no recurrence on 9-months of follow-up (Fig. 3a, b).

Discussion:-

Tenosynovial giant cell tumor is a locally aggressive tumor arising from the synovia of the fibrous tissue surrounding the joints, tendon sheaths, mucosal bursas and tendons [1, 3]. It is more common in women and the average age range is 30–50 [1, 4]. It has diffuse and localized forms. These tumors are rarely intraarticular in large joint as in our case.

Diagnosis of the localized form is extremely difficult because the symptoms may mimic a meniscal lesion [5, 6, 7]. Mechanical symptoms such as popping, effusion, and edema are usually present. The pain is found to be imprecise, however, and is rarely intense.

Plain radiographs are usually normal while MRI is very helpful in diagnosis.

MRI is extremely useful in these cases, since it reveals the presence of a well-circumscribed heterogeneous mass due to the of hemosiderin pigment content in the lesion [8].

Malignant tumors, such as synovial sarcoma and benign soft tissue tumors should be kept in mind in differential diagnosis. MRI diagnosis must be confirmed by histopathological examination.

A few reports of tenosynovial giant cell tumour arising from PCL have also been published [9, 10, 11].

Marginal excision is sufficient in the treatment. Recurrence rate is between 10 and 20% [12]. The treatment for localized pigmented villonodular synovitis is arthroscopic resection or open surgery.

The arthroscopic technique offers a rapid functional recovery but it is difficult to accessing the posterior locations and the intralesional removal of the tumor by fragmentation with the help of shaver creates doubt in terms of tumor surgery principles.

For that reason, we believe that the marginal excision of the synovial giant cell tumor in its localized form with open surgery is an effective way of treatment.

Conclusion:-

The localized form of tenosynovial giant cell tumors in the knee joint is very rare and may arise from PCL. MRI is useful for diagnosis that is confirmed by histopathology. Marginal excision is sufficient in the treatment.

Iconography:

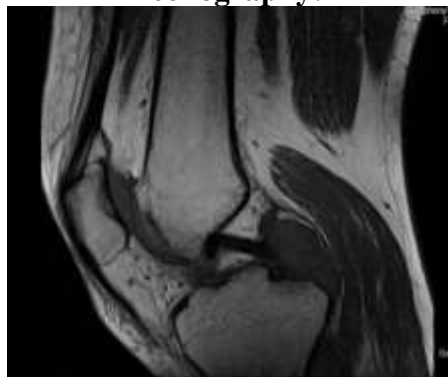


Figure 1a: T1-weighted sagittal MRI of the right knee demonstrated a soft tissue mass with low signal intensity in front of the PCL femoral insertion.

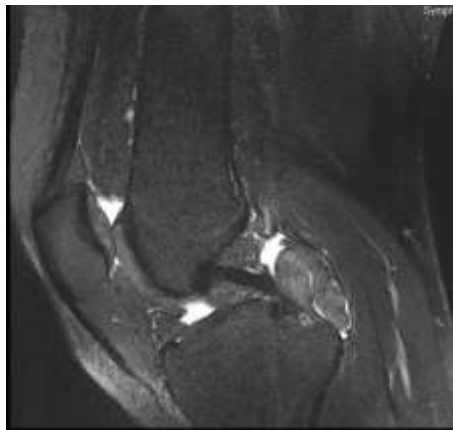


Figure 1b: T2-weighted sagittal MRI showed heterogenous mass with high signal intensity.

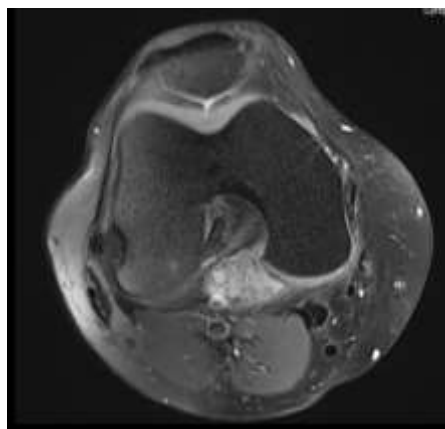


Figure 1c: T1-weighted coronal MRI showed a heterogeneous mass that does not involve the popliteal neurovascular bundle.



Figure 2a: The well circumscribed mass was located behind the PCL.



Figure 2b: The PCL was intact after complete excision.



Figure 2c: The mass measuring about 35 × 25 mm in diameter.



Figure 3a:Figure 3b:
Figure 3a and 3b: Good cutaneous healing and joint mobility at follow-up.

Conflict of interest:-

The authors declare that they have no competing interest.

References:-

- 1 D. E. Kramer, F. J. Frassica, D. A. Frassica, and A. J. Cosgarea, "Pigmented villonodularsynovitis of the knee: diagnosis and treatment," *The Journal of Knee Surgery*, vol. 22, no. 3, pp. 243–254, 2009.
- 2 Kuhnen C, Muller KM, Rabstein S, Kasprzyński A, Herter P. Tenosynovial giant cell tumor. *Pathologie*. 2005;26(2):96- 110.
- 3 I.Akgun, T.Ogut,H. Kesmezacar, andS.Dervisoglu, "Localized pigmented villonodularsynovitis of the knee", *Orthopedics*, vol. 26, no. 11, pp. 1131–1135, 2003.
- 4 C. Sun, W. Sheng, H. Yu, and J. Han, "Giant cell tumor of the tendon sheath: a rare case in the left knee of a 15-year-old boy", *Oncology Letters*, vol. 3, no. 3, pp. 718–720, 2012.
- 5 Asik M, Erlap L, Altinel L, Cetic O. Localized pigmented villonodularsynovitis of the knee. *Arthroscopy*. 2001;17(6):1-6.
- 6 Kim SJ, Shin SJ, Choi NH, Choo ET. Arthroscopic treatment for localized pigmented synovitis of the knee. *ClinOrthopRelat Res*. 2000; (379): 224-30.
- 7 Muscolo DL, Makino A, Costa-paz M, Ayerza M. Magnetic resonance imaging and arthroscopic resection of localized pigmented villonodularsynovitis of the knee. *Orthopedics*. 2000; 23(4):367-9.
- 8 C.M. Jobe, A. Raza, and L. Zuckerman, "Pigmented villonodularsynovitis: extrasynovial recurrence," *Arthroscopy*, vol. 27, no. 10, pp. 1449–1451, 2011.
- 9 Kim R, Lee J, Lee K. Localized pigmented villonodularsynovitis attached to the posterior cruciate ligament of the knee. *Arthroscopy*. 2003;19:e32e35.
- 10 Sheppard D, Kim E, Yasko A, Ayala A. Giant-cell tumor of the tendon sheath arising from the posterior cruciate ligament of the knee: a case report and review of the literature. *Clin Imaging*. 1998;22:428e430.
- 11 Camillieri G, Di Sanzo V, Ferretti M, Calderaro C, Calvisi V. Intra-articular tenosynovial giant cell tumor arising from the posterior cruciate ligament. *Orthopedics*. 2012;35: e1116-e1118.
- 12 H. Lowyck and L. de Smet, "Recurrence rate of giant cell tumors of the tendon sheath", *European Journal of Plastic Surgery*, vol. 28, no. 6, pp. 385–388, 2006.