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CASE REPORT

SYNOVIAL HAEMANGIOMA OF THE KNEE: A CASE REPORT

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ABSTRACT

We report our clinical experiences in the diagnosis and treatment of a patient with synovial hemangioma. Synovial hemangiomas are uncommon causes of recurrent, nonspecific joint complaints and occur most often at the knee joint. Non traumatic joint swelling combined with recurrent hemorrhagic joint effusions must be considered signs of a synovial hemangioma. Although no preoperative diagnostic tool enables confirmation of the diagnosis, and MRI seems to be the diagnostic investigation of choice. It is important for the clinician to be aware of the existence of this disease. Early surgical treatment with excision of the tumor with wide margins of non involved normal synovium is the therapy of choice and it avoids degenerative changes as demonstrated with the case reported here.

INTRODUCTION

Synovial haemangioma is a rare benign vascular tumour arising from the synovial joints most commonly involving the knee joint. It is common in adolescent age group with rare presentation in adults. It was first reported in 1856 by Bouchat (Greenspan, 1995). Nonspecific clinical features, laboratory and radiological findings delay the diagnosis of these tumours. Recurrent knee effusion without a definite history of trauma and bleeding diasthesis, should prompt to the diagnosis of synovial haemangioma of the knee joint. We present a case of synovial haemangioma of the knee treated with excision 6 years ago with no signs of recurrence till date. An Informed consent has been obtained from the patient for publication of case history and necessary photographs as well.

Case Report

An eight years old male presented to our clinic with occasional pain, decreased range of motion and persistent swelling of the right knee following a fall 1 year back. The patient did not have any other co morbidities. Following an episode of fall there was continuous pain in the knee which gradually subsided. On physical examination, there was a soft, non tender and fluctuant swelling over infero-lateral to patella free from overlying skin (Figure 1). There was terminal restriction of flexion beyond 110 degrees (Figure 2). X ray did not show any obvious abnormality. Ultrasound reported a hypoechoic ill defined lesion seen in infra-patellar pad on lateral aspect (19 x 12 mm). MRI Study revealed a multilobulated lesion in the antero-lateral aspect of infra-patellar fat pad, bulging and thinning of the lateral patellar retinaculum with focal areas of hemorrhage and calcification within, suggesting most likely to be haemangioma (Figure 3).

Figure 1. Clinical picture showing a soft, non tender and fluctuant swelling infero-lateral to patella, free from overlying skin

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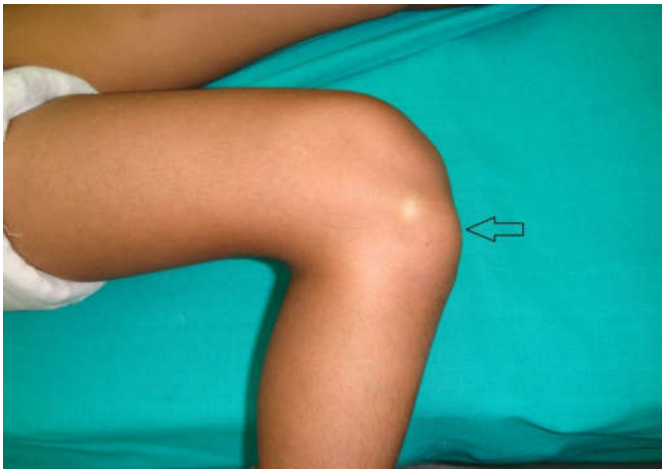

Figure 2. Terminal restriction of flexion beyond 110 degrees

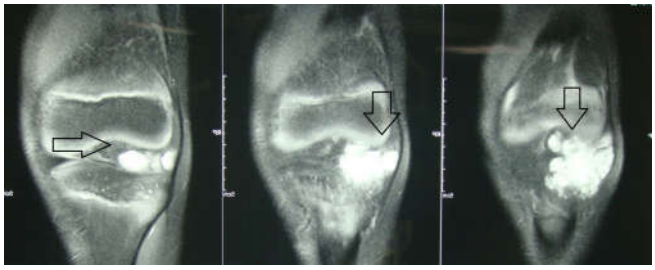

Figure 3. MRI Study suggesting most likely to be haemangioma

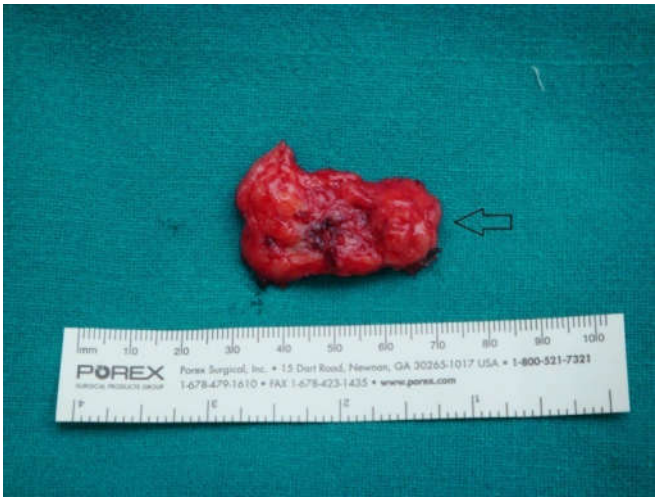

Figure 4. Pathological specimen

The differential diagnosis for lesion were a ganglion cyst, pigmented villonodular synovitis, synovial chondromatosis and synovial sarcoma. The radiological finding prompted the diagnosis of heamangioma so a proper consultation with vascular team was taken and open excision of lesion was planned. Initially arthroscopic excision of tumour was planned but looking at size of lesion and need to achieve tumour free surgical margin, an open excision was done. The lateral parapatellar incision was used to reach the lesion, which was 1.5x2cm size, reddish brown in color, arising from synovium (Figure 4). To ensure tumour free margins, the sample was sent for frozen section examination after excision. The intra-articular extension of the lesion was thoroughly assessed. Histopathologically, the lesion proved to be cavernous haemangioma. The patient was followed up regularly for 6 years and was asymptomatic with no fresh complaints with full range of knee motion.

DISCUSSION

Haemangiomas arising in a joint are rare. Amongst all the joints involved, the knee is the most common followed much less commonly by elbow, wrist and ankle (Mohammadi *et al*., 2008). Less than 200 cases have been reported in the world literature as of now (Price, 1997). Due to non specific presenting features and radiological findings, usually there is diagnostic delay of many years. Synovial haemangioma most commonly presents in early adolescent age group with average age group being (8-14 yrs). A typical patient presents with pain, swelling, effusion of knee with or without history of trauma. Recurrent effusion of the knee joint without significant history of trauma and coagulation disorders should raise suspicion of synovial haemangioma. There may or may not be joint movement restriction. In the present case, while the pain subsided, swelling of the knee joint persisted even after one year of the traumatic episode.

On clinical examination, the swelling was non tender and compressible. Synovial haemangiomas are classified into a) cavernous b) capillary c) venous and d) arteriovenous (Greenspan, 1995; Mohammadi *et al*., 2008; Price, 1997 and Aynaci, 1995). This classification is based on the major vessel feeding the lesion. Based upon their anatomical location they can be classified into juxtaarticular, intra-articular or intermediate type with intermediate type being the most common (Aynaci *et al*., 1995; Ramseier *et al*., 2004 and Abe, 2002). Histopathologically, our case proved to be a cavernous haemangioma having both intra-articular and extra-articular component. It had several thin walled vessels indicating the cavernous type. Imaging studies are non specific for diagnosing synovial haemangioma. X rays are often inconclusive and may show soft tissue density or phlebolith. MRI has emerged as most reliable radiological entity in delineating these tumours due to better contrast resolution and multiplanar imaging potential.

On T1 weighted images synovial haemangiomas show low to intermediate intensity and on T2 images they show high signal intensity as compared to nearby tissues. Contrast enhanced MRI clearly define the extent of lesion with respect to surrounding anatomic structures. It can also differentiate the lesion from joint effusion which shows no distinct enhancement. Radiological differential diagnosis most commonly encountered include a) pigmented villonodular synovitis which shows low to intermediate intensity on T2 images and b) synovial osteochondromatosis which shows cartilage signal intensity. Synovial haemangiomas should be treated as early as possible once diagnosed since recurrent episodes of bleeding may lead to early joint arthropathy and the lesion may also infiltrate nearby structures (Abe, 2002). Treatment modalities include open excision, arthroscopic excision, embolization, arthroscopic embolization with a holmium or YAG laser, radiotherapy and use of sclerosing agents.

Arthroscopic excision is the treatment of choice when the lesion is pedunculated and well circumscribed. Diffuse, juxta-articular and intermediate grade of lesions mandate open

excision (Suh *et al*., 2003; Meislin and Parisien, 1996). In our case since the lesion was of intermediate grade it was excised after arthrotomy. Diffuse synovial haemangiomas have a high recurrence (18-50 %) following surgical excision whereas localized lesions have excellent outcome (Price, 1997). In our case, the lesion was localized and on clinical follow up of more than five years did not show any recurrence.

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