Mediterranean BioMedical Journals
International Journal of Medicine and Surgery
Volume 3, Issue 1, 2016
DOI: 10.15342/ijms.v3i1.76

CLINICAL CASE

Intramuscular Benign Lipoma of the Biceps Brachii Muscle A Case Report

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Received 26 January 2016; Revised 01 June 2016; Accepted 22 June 2016.

ABSTRACT
Intramuscular lipoma is an uncommon mesenchymal neoplasm that characteristically infiltrates adjacent tissues and tends to recur after excision. Only a few publications referring to the upper extremities location have been reported. We report a case of an intramuscular lipoma of the biceps brachii muscle studied with MRI. Complete excision was performed without recurrence.

KEY WORDS: Lipoma; Intramuscular; Biceps Brachii; Excision.

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INTRODUCTION

Lipomas are one of the most frequently encountered benign mesenchymal tumours composed of mature fat tissue, commonly found in the superficial subcutaneous tissues of the extremities and trunk. A lipoma may occasionally be found within the muscle (i.e. intramuscular or infiltrating lipoma) or between the muscles (i.e. intermuscular lipoma). Intramuscular lipomas are extremely rare. In most reported cases, the tumours involved the extremities and trunk or rarely involved different muscles in the head and neck region [1]. Only a few publications referring to the upper extremities location have been reported.

CASE REPORT

A 70-year-old post-menopausal woman presented with a 2 years history of a slowly increasing painless swelling in the right arm. Local examination showed a tumor of the anterior face of the distal half of the right arm having a 5x6 cm size, hard, non-tender with normal overlying skin. MRI showed a solitary, homogenous fat density mass with intervening septations and bisecting thebiceps brachii muscle (Figure 1). These findings were consistent with a diagnosis of lipoma of the right arm to depend on the biceps brachii muscle.

Complete excision was performed under locoregional anaesthesia. A well circumscribed, round to oval multi-

lobular, yellowish brown mass measuring 4x5 cm was removed (Figure 2). The cut surface was solid, firm, yellowish, shiny and without haemorrhage or calcifications. Microscopic examination showed mature adipose tissue. Surgical margins of resection were negative for the tumour.

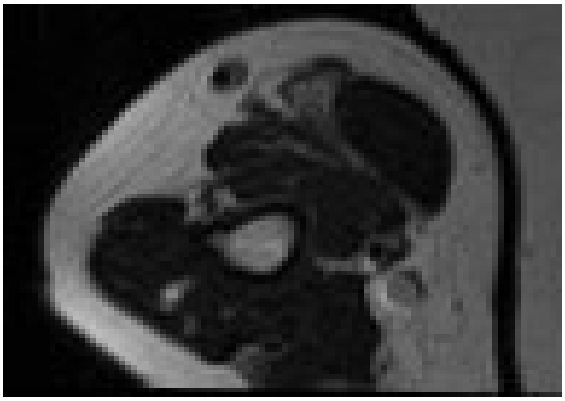

Figure 1: MRI aspect of the intramuscular lipoma of biceps brachii muscle.

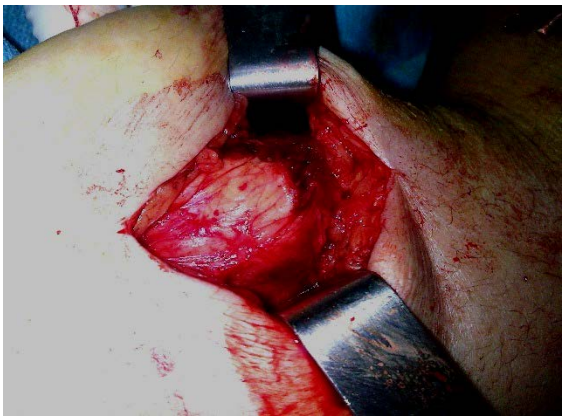

Figure 2: Operative aspect of the intramuscular lipoma of the biceps brachii muscle before total excision.

DISCUSSION

Lipoma, the most common soft tissue mesenchymal benign tumor, is composed of mature fatty cells. It is usually located subcutaneously without infiltrating adjacent tissues. Infiltrating lipomas are subclassified as intermuscular (more common) and intramuscular (rare) types. Intermuscular lipomas are thought to arise from the intermuscular septa and enlarge between muscle bundles. However, intramuscular-type lipomas arise between the muscle fibers and pass through the intermuscular septa, infiltrating the surrounding tissue. The first report of intramuscular lipoma was presented by Hoffman in 1941; however, it was Regan et al. who called it intramuscular benign lipoma (IBL) in 1946 [1,2]

Deep soft-tissue lipomas most frequently occur in patients 30–60 years old, and lesions commonly affect the large muscle groups of the lower extremity (45% of cases), trunk (17%), shoulder (12%), and upper extremity (10%) [1, 3, 4]. Only a few publications referring to the upper extremities have been reported (tableau I) [5-8].

There is a general consensus that men are affected more frequently than are women. Although the size range at manifestation is wide, from small to 20 cm, deep lipomas are larger than their superficial counterparts at clinical presentation [1,3,4].A lipoma typically manifests as a discrete mobile palpable doughy, solitary soft-tissue mass. Lesions are frequently otherwise asymptomatic and may enlarge slowly. Associated clinical symptoms are uncommon but include local pain, tenderness, limitation of range of motion, and nerve compression and are reported in approximately 5% of patients with superficial lipomas [2].

When deep, large or unusual in location, radiography, CT scan and MRI help to identify and localise these tumours. Radiolucency and poor vascularisation are characteristics of a lipoma on plain radiography. On ultrasound, intramuscular lipoma of the arm are well defined and homogeneously echogenic. A lipoma appears as a sharply defined marginated, homogenous fat density mass on CT scan. The advantage of CT scan and MRI is their ability to demonstrate septations, solid components and enhancement wich may raise the suspicion of liposarcoma [9].

In our case, the MRI led to radiological diagnosis of an intramuscular lipoma of the biceps brachii muscle, prior to the excision and histopathological confirmation of the diagnosis.

Treatment of soft-tissue lipoma depends on tumor location, size, and clinical symptoms referable to the lesion. Most superficial lipomas are asymptomatic and do not require treatment or surgical excision. Symptomatic, large or deep lipomas are often surgically excised with a wide resection, including the capsule and a small cuff of surrounding tissue. The prevalence of local recurrence has been estimated at 4%–5% and is more frequent with deep and infiltrating lesions [1,10,11]. Resection of large and deep lesions is more difficult, and the extent of resection is often modified to avoid injuring nearby important neurovascular or muscular tissue and causing functional impairment. This compromise between adequate surgical margins and functional disability may lead to incomplete resection and an obviously higher local recurrence rate. MR imaging is optimal for detecting local recurrence of lipomas, as with other soft-tissue neoplasms. However, it is important to understand that these benign lesions have no metastatic potential. In addition, malignant transformation has only very rarely been reported [12, 13]. In fact, we believe malignant transformation is nonexistent and that reported rare cases likely represent sampling errors or misdiagnosis at initial investigation. In our patient, the tumour was completely excised and there is no evidence of recurrence at the last follow up.

CONCLUSION

An intramuscular lipoma of the biceps brachii muscle is exceptionally rare and practically never enters into the clinical differential diagnosis of the benign or malignant tumours in this location. Pre-operative CT scans or MRI are useful in determining the size and distribution of intramuscular lipomas, but the diagnosis must be confirmed by excisional biopsy. Because of the risk of recurrences after local resection we recommend consideration of total resection of involved muscles.

AUTHORS' CONTRIBUTIONS

The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals of the International Committee of Medical Journal Editors. Indeed, all the authors have actively participated in the redaction, the revision of the manuscript and provided approval for this final revised version.

ACKNOWLEDGEMENT
Declared none.

PATIENT CONSENT
Written informed consent was obtained from the patient for publication of this case report.

COMPETING INTERESTS
The authors declare no competing interests.

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