DIAGNOSIS OF B-CELL LYMPHOMA FROM GLUTEAL MUSCLE MASS

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Abstract
A 46-year-old man was with a very large mass in his right gluteal muscle and he complained about difficulty in mobility. Incisional biopsy reported a lipomatous lesion; however, clinical presentation was in the favor of muscle sarcoma. Histological analysis after mass excision confirmed the diagnosis of diffuse large B-cell lymphoma.

KEYWORDS
excision, gluteal mass, lymphoma, sarcoma

1 | INTRODUCTION
Extranodal indication of lymphomas is clearly seen in 30% of these cases. Nonetheless, its manifestation in skeletal muscle is uncommon. Pelvis and gluteal muscles are usually involved in such case due to metastases of nearby lymph nodes or bone. Only 0.5% of extranodal lymphomas constitutes to primary skeletal muscle lymphoma which is usually B-cell or non-Hodgkin. The clinical manifestation of lymphoma can mimic other soft tissue masses, particularly sarcoma. Differential diagnosis is necessary in order to proceed to the corresponding treatment procedure.1 This case report presents a patient with large gluteal muscle mass, who after excision and immunohistochemistry tests were confirmed to have Hodgkin’s lymphoma (NHL).

We report a patient with a gluteal mass who was operated, and the definite diagnosis for B-cell lymphoma was established by immunohistochemistry (IHC) only after the surgery.

2 | CASE PRESENTATION
A 46-year-old man presented with painless swelling of his right buttck. There was a gradual increase in swelling for 2 months leading to difficulty in movement. He refused to have any history of fever, night sweats, and weight loss. The patient was a well-nourished middle-age man with no palpable cervical, axillary, and inguinal lymphadenopathy. Systemic examination was normal, except for a huge right gluteal mass which was not painful on palpation and seemed to be firm, fixed, and deep in the muscle, causing ipsilateral lower extremity weakness. CXR was normal and other laboratory findings including fasting blood sugar, complete blood count, serum electrolytes, liver function test, and coagulation tests were normal. Pelvic magnetic resonance imaging (MRI) detected an extended mass involving the right gluteal, iliopsoas, obturator, piriform muscle, associated with abnormal signals from the right iliac bone and sacrum ala whereas, pelvic organs were intact (Figure 1).

Incisional biopsy was carried out under local anesthesia. Histopathological findings reported a lipomatous tissue. Due to the undetermined diagnosis by incisional biopsy and an indication of soft tissue malignancy, particularly sarcoma, excisional surgery was performed. Findings from the surgery revealed a giant hard mass infiltrating the adjacent muscle extending to the sciatic groove and involvement of the sciatic nerve. Extensive resection but not en bloc resection was performed due to the involvement of the nerve and bone. Primary pathological analysis did not report a definitive diagnosis therefore immunohistochemical (IHC) staining was performed. Following surgery, the patient’s right lower limb and genitalia had gradually swollen due to pitting edema. One month later, he was admitted to hospital again: Blood lactate dehydrogenase was 1281 IU/L, abdominopelvic CT scan...
revealed an abnormal infiltrative mass lesion at the right side of his pelvic cavity extending toward the ischioanal fossa, and an infiltrative mass was also seen at the surgical site (Figure 2).

The IHC staining of a fixed specimen showed positive staining for leukocyte common antigen, CD3, CD20, Ki67 40% and negative for CD15, CD30, S100, anaplastic lymphoma kinase for the tumor cells. These features are in confirmation with diffuse large B‐cell lymphoma; thus, the patient was referred to the department of hematology for further evaluation and treatment.

3 | DISCUSSION

Lymphoma can originate in the lympho-reticular tissue, within any part of the system, comprising of 10% of all malignant tumors and is divided into Hodgkin disease and non-Hodgkin lymphoma (NHL). Extramodal lymphoma refers to neoplastic proliferation of lymphocytes at sites other than native lymph node and lymphoid tissue. Extramodal involvement of NHL is approximately 20%-30%. Primary extramodal, located only on the extramodal site, commonly arise from gastrointestinal tract whereas, primary skeletal muscle non-Hodgkin’s lymphoma (PSM NHL) is rare, and constitutes up to 0.1 to 0.5% of NHL. Skeletal muscle is involved by lymphoma either in the course of disseminated disease, spread from contiguous lymph node or as a primary extramodal lesion. It seems that an aberrant lymph node in the skeletal muscle can lead to primary skeletal muscle lymphoma, while it is not detected histologically at the time of diagnosis. Skeletal muscle lymphoma generally arises in the extremities, especially lower limbs and in the thigh, since these extremities are most exposed to injuries. Skeletal muscle lymphoma can occur after limb trauma, adjacent to injection sites and in the rectum of homosexual men. Our patients presented gluteal muscle mass and had medical history for intramuscular injection of medication in the affected site. The most common type of muscle lymphoma is diffuse large B-cell type. Many of these are low grade and have a good prognosis. On the other hand, some skeletal muscle lymphoma originate from T cells that have poor prognosis. There are several reports that have discussed the role of imaging in muscle lymphoma where, CT scan commonly used to determine the stage of lymphoma, however, is not considered useful in distinguishing muscle lymphoma from others soft tissue masses. There are certain properties of lymphoma that aids there detection to be bypassed from CT scan.

MRI seems to be superior in the evaluation of soft tissue lesions compared to CT scan and appears to be the choice in analyzing its relationship with neurovascular elements. Only Clinical examination and imaging results can lead to misdiagnosis of skeletal muscle lymphoma; however, added pathologic and immunohistological (IHC) analysis can lead to accuracy. Although fine needle aspiration (FNA) is of low cost, low complication, and simple to perform, it is only able to yield cytologic information, while the architecture of the tumor is also an important element to determine the histology. We carried out an excisional biopsy in this case but the diagnosis was mistaken perhaps, due to sampling inaccuracy that was obtained from fat over the fascia, while the mass was deep in the muscle, resulting in the inability of the IHC staining to detect lymphoma.

Although lymphoma is as rare as primary skeletal muscle mass, it should always be considered in the cases soft tissue mass in the lower extremities and trunk. FNA is inadequate to establish the diagnosis and an IHC examination following a precise biopsy of the mass is essential to distinguish
lymphoma from other soft tissue sarcomas. It is important to emphasize that differentiating lymphoma from other soft tissue sarcomas is mandatory to initiate precise treatment.

CONFLICT OF INTEREST
The authors deny any conflict of interest in any terms or by any means during the study. All the fees provided by research center fund and deployed accordingly.

AUTHOR CONTRIBUTIONS
AS: conceptualized and designed the study, drafted the initial manuscript, and reviewed and revised the manuscript. Designed the data collection instruments, collected data, carried out the initial analyses, and reviewed and revised the manuscript. Coordinated and supervised data collection, and critically reviewed the manuscript for important intellectual content. All authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

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How to cite this article: Shirzadi A. Diagnosis of B-cell lymphoma from gluteal muscle mass. Clin Case Rep. 2019;7:1316–1318. https://doi.org/10.1002/ccr3.2206