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GIANT LIPOMA OF LEFT THIGH IN A MORBIDLY OBESE INDIVIDUAL- PERIOPERATIVE NIGHTMARE - CASE REPORT

General Surgery

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ABSTRACT

Lipomas are most common benign soft tissue tumors of mesenchymal origin. They are ubiquitous and can arise from any part of the body. But giant lipoma are rare lesions which can be >10 cm in size and >1 kg in weight. Giant lipoma of extremities cause significant functional and mechanical impairment which affects day to day activities of the patient and also cause cosmetic disfigurement. Although malignant transformation is rare,it can be ruled out only after excision and histopathological examination of specimen.Here we present a case of 49 year old morbidly obese male who present with giant swelling in the left thigh for past 6 month. Patient has multiple co-morbidity namely type 2 diabetes mellitus, systemic hypertension, coronary artery disease, hypothyroidism, obesity. In view of large size of swelling, we planned for wide local excision. His perioperative concerns were comorbidities, patient positioning, difficult intra-venous access, intubation, high risk of DVT. After carefully planning between surgical team, anesthesia team, OT staff nurse and OT technician, surgery was completed successfully. Post op histopathology revealed benign lipomatous lesion with no evidence of malignancy.In conclusion, the presence of obesity increase the risk for surgical and post surgical complications. However with proper collaborative efforts among medical discipline, the occurrence of the complications can be reduced quite significantly. Giant lipomas should require surgical intervention due to their potential risk of malignancy and functional disturbance. Margin of 1 cm prevents recurrence and post operative histopathological confirmation should be done to rule out malignancy. This significantly improves the life style of patient.

KEYWORDS

INTRODUCTION

Lipomas are most common benign soft tissue tumors of mesenchymal origin. They are ubiquitous and can arise from any part of the body. But giant lipoma are rare lesions which can be >10 cm in size and >1 kg in weight. Giant lipoma of extremities cause significant functional and mechanical impairment which affects day to day activities of the patient and also cause cosmetic disfigurement. Although malignant transformation is rare,it can be ruled out only after excision and histopathological examination of specimen.

Case Report

49 year old male came to the OPD with chief c/o swelling with pain in the Left foot and leg for the past 3 days. Patient also complained of swelling in left thigh for the past 6 month. When the patient first noticed the thigh swelling it was 3×3cm after which it gradually progressed over a period of 6 months to attain the current size. The swelling was very large that patient had difficulty in walking and carrying out his daily activities. Patient is known case of diabetics mellitus and hypertension on irregular medication. He gave a history of taking medications for coronary artery disease 4 years back which he took for only 6 months.

On examination, patient was morbidly obese with a BMI of 37.5(Class- 2 obesity). On physical examination of both lower limbs, he had b/l pedal edema associated with skin discoloration and skin excoriations. Left lower limb was more edematous skin was stretched and shiny with mild warmth and tenderness which subsided with limb elevation and compression dressing.On further examination, a single pedunculated swelling with wide base of size 28×20×19 cm was present in the anteromedial aspect of upper thigh. Swelling was variable in consistency with soft and cystic portions. Skin over the swelling was edematous with no ulceration or nodules. Swelling was mobile and not attached to skin or underlying structures. MRI left thigh revealed large well defined T1,T2 hyperintense polypoidal mass lesion of size 29.8(cranio caudal)× 20.4(anteroposterior) ×19.6(transverse) arising from subcutaneous plane in medial aspect of left thigh with thin multiple internal septations with no evidence of diffusion restriction- p/o gaint lipomatosis of left thigh/ lipodystrophy of left thigh. Bilateral lower limb Av Doppler was done which revealed monophasic flow noted in whole left lower limb from common femoral to dorsalis pedis artery. Vascular surgery opinion was obtained which suggested adequate peripheral vascularity and to continue further line of management.

Image-guided core needle biopsy was done with revealed sections studied shows fibrocollagenous, fibrofatty tissue and lymphocytic infiltrate, serofibrinous exudate with no evidence of malignancy in the section studied. Case was discussed with surgical oncology team for further management and in view of large size of swelling we were advised to proceed with wide local excision of the swelling and to review with histopathology report.

On admission TFT levels were high and was started on T. Thyroxine. His perioperative concerns were comorbidities, patient positioning, difficult IV access, equipments, pre-oxygenation, Induction and anticipated difficulty in both mask ventilation and intubation, intra op ventilation, glucose management and post op pain management, PONV, ventilation, DVT are the major concerns. Pre op optimization was done adequately along with deep breathing exercises and incentive spirometry during the entire peri operative period. One day prior to surgery, the case was discussed with Theatre chief anesthesiologist and team along with surgical team, OT head staff nurse and technicians for a proper planning and execution of the surgery. On the day of surgery, 2 electronically operated OT tables were attached together, Monitors with EtCo2 and IABP and CVP transducer were made ready.Intra op - maintenance of anaesthesia was done with TCI Propofol (ELEVELD) and dexmed infusion (bolus dose - 1mcg/kg, maintenance 0.4 mcgs/kg/hr) with single syringe infusion pumps. O2 and N2O were used at 1lit respectively.

Intraoperatively, a eliptical incision of 20 cm was made at the base of the swelling. Skin flap was raised on both sides. Swelling was meticulously dissected from the surrounding structures. Swelling was removed intoto with 1 cm circumferential cleareance along with fascia lata from the tumour bed. Wound was closed after placing suction drain. Post extubation, complete neurological recovery was obtained immediately and patient was able to maintain his airway and ventilation adequately. He was shifted to PACU for post op observation and discharged from PACU 1 day after surgery to general surgical ward. Patient was started on DVT prophylaxis and early slow mobilisation was done on POD- 2. Drain was removed on POD - 5. Patient was discharged on POD- 8.

Post-operative histopathology examination on low power revealed

stroma with fibroblasts and collagen with lobules of adipocytes. Corresponding high power showed fibroblasts with minimal atypia, reflecting reactive fibroblasts with no signs of malignancy. Review tumor board opinion advised just follow up of the patient.

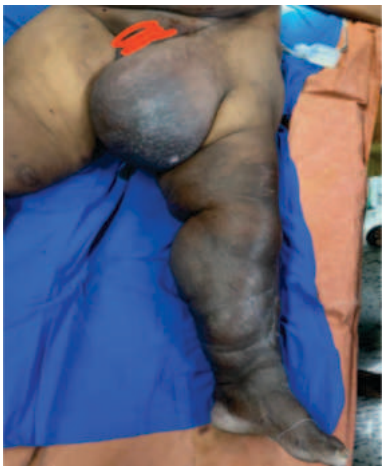

Figure 1 - Pre-op Photo Of Swelling With Patient In Supine By Combining Two OT Tables

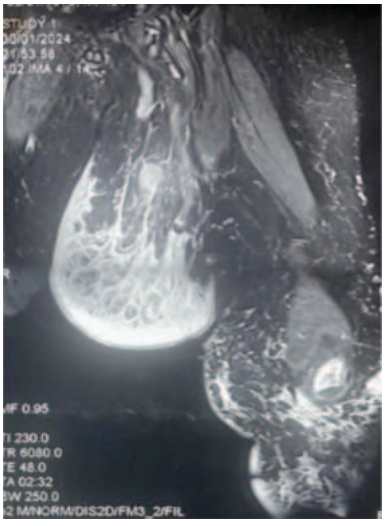

Figure 2 - MRI Image Of Swelling

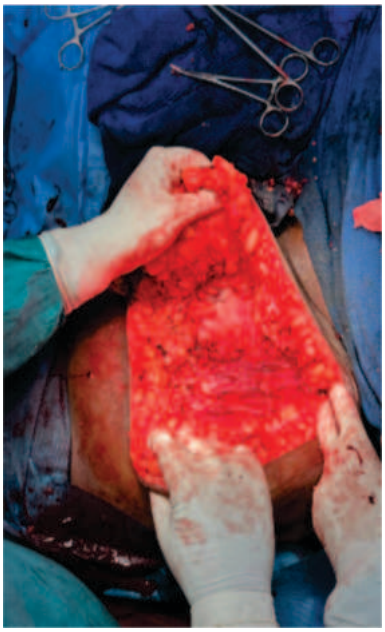

Figure 3 - Post Operative Tumor Bed With Deep Fascia Removed Exposing The Underlying Muscles

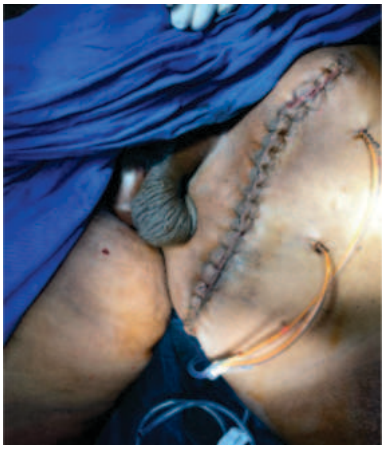

Figure 4 - Wound Site After Wide Local Excision

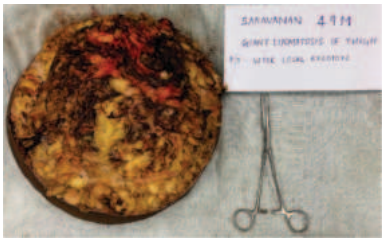

Figure 5 - Post Operative Specimen Weighing 5kgs

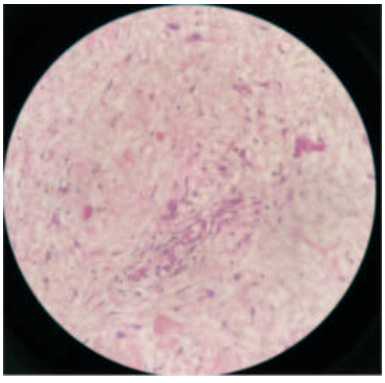

Figure 6 - Post Operative Histopathology Slide In High Power View

DISCUSSION

Lipoma is the most common benign tumor of the adipose tissue. Lipomas have prevalence rate of 2.1 per 1000 of population and constitute 16 % of all mesenchymal neoplasms .Giant lipomas are defined by measuring at least 10 cm in diameter in one dimension or by a minimum weight of 1000 g. It can occur anywhere in the body. They are usually located on the trunk or extremities; however, they can also be subcutaneous,interosseous, visceral, intramural, subfacial or intermuscular.[1,2,3]

Intermuscular lipomas grow between the large bundles and often form a large central tumor that secondarily infiltrates adjacent muscles. On the other hand, an intramuscular lipoma is considered to originate between the muscle fibers within the muscle bundles themselves and penetrates adjacent muscle passing through the intermuscular septa. .The subcutaneous or superficial lipomas are more common than deep lipomas occurring in muscular compartments. Adipose tissue accumulation is higher in females than in males; therefore, lipomas are more frequently encountered in women and more common in the 40–60 years age group.[3]

The exact pathophysiology of lipomas is unclear.Genetics may play a role in a minority of patients, as 2% to 3% of affected patients have multiple lesions inherited in a familial pattern.An gene association has been described on chromosome 12 in some solitary lipomas; a mutation in the HMGA2-LPP fusion gene is present in some of these tumors.There also are several genetic syndromes that feature lipomas as a clinical manifestation. The incidence of lipomas is also increased

in patients with obesity, hyperlipidemia, and diabetes mellitus.[9,10]

Most lipomas present as small subcutaneous swellings without any specific symptom. They are usually single, and evolve over many years asymptomatically, except when they compress adjacent tissues such as muscles and nerves. When they occur in lower limbs, they may affect walking due to their excessive size and weight. Clinical features of these giant lipomas are mainly due to their size and may include pain from stretching or compression of adjacent nerves, compartment syndrome, restriction in movements of the joint involved, and social embarrassment or inability to wear clothing. [4,5]

They are usually soft in consistency, but in some cases, they can be relatively firm and impressive in size. The only difference between subcutaneous fat and lipoma is that lipoma contains a few thin septa which are less than 2 mm thick.

Malignant transformations (liposarcoma) are rare and should be investigated when tumors grow fast, are recurrent or when there are skin ulcers .Liposarcoma is a long-term complication of the disease; these lesions may progress histologically (dedifferentiate), a phenomenon that confers metastatic potential. Dedifferentiation is largely a time-dependent phenomenon that occurs in sites in which there is a high likelihood for clinical persistence of disease (eg, the retroperitoneum).[2,5]

Liposarcomas are associated with immature fat cells or lipoblasts. These cells have an eccentric, hyperchromatic nucleus that is indented or scalloped by the presence of one or more fat vacuoles. Proliferation of mature adipocytes

- Paucicellular fibrous septa can be present
- Fat necrosis is often found in larger tumor[6]

The characteristics of benign lipomas on ultrasonography, computed tomography and magnetic resonance imaging have been well established, and technetium-99 diethylenetriaminepentaacetic acid scanning has also been used to confirm the diagnosis. lndications for biopsy include a firm, rapidly enlarging mass.lipomas with benign ultrasound and CT scan findings such as thin septa, homogenous echogenicity, and well-defined capsule limits. CT or MRI features that distinguish between lipomas and liposarcomas, suspicious characteristics such as large size, heterogeneity, irregularly thickened septa, high degree of vascularity, and low-fat content all warrant an initial biopsy.[7]

Some authors recommend electromyography, both in the pre-and postoperative periods, to evaluate possible changes in electrical conductivity of the adjacent nerve and in the electrical activity of muscular tissues of the affected limb, considering that, due to their size, these tumors may compress and affect these structures. Electromyography is useful in these cases for surgical planning and postoperative follow-up of the functional recovery of affected limb.[6]

Lipomas can be managed conservatively or excised. Lipomas are removed for the following reasons; cosmetic motives, evaluation of histology, mainly when liposarcomas must be ruled out, when they cause symptoms or when they grow and become larger than 5 cm.[3]

For treatment of giant lipomas, there are two surgical options; open surgical excision and suction lipectomy.open surgical excision is considered as the best treatment.Marginal excision can be done for well circumscribed lipomas and wide excision with a free margin is required for the infiltrative type of lipoma to prevent recurrence. When muscles are invaded or impaired, in addition to removing the tumor, it may be necessary to remove part of the muscular tissue. When they are intermuscular, it is possible to remove tumors without affecting the adjacent muscular tissues, as in the case herein described.The amputation of the affected limb is rare, and only indicated when there is a major impairment of the muscles, requiring extensive resections and, consequently, causing functional disability. The suction lipectomy has good cosmetic result but incomplete removal of extensions, left out thick and fibrous capsule, trauma to neurovascular structures by tip of suction cannula can lead to high recurrence rate. [5,8]

CONCLUSION

The presence of obesity increase the risk for surgical and post surgical complications. However with proper collaborative efforts among medical discipline, the occurrence of the complications can be reduced quite significantly. Giant lipomas should require surgical intervention due to their potential risk of malignancy and functional disturbance. Margin of 1 cm prevents recurrence and post operative histopathological confirmation should be done to rule out malignancy. This significantly improves the life style of patient.

REFERENCES

1) Balakrishnan, C., Nanavati, D., Balakrishnan, A., & Pane, T. (2012). Giant lipomas of the upper extremity: Case reports and a literature review. The Canadian journal of plastic surgery = Journal canadien de chirurgie plastique, 20(3), e40–e41.
2) Maximiano, L. F., Gaspar, M. T., & Nakahira, E. S. (2018). Madelung disease (multiple symmetric lipomatosis). Autopsy and Case Reports, 8(3). https://doi.org/10.4322/acr.2018.030
3) Pagonis, T., Givissis, P., & Christodoulou, A. (2011). Complications arising from a misdiagnosed giant lipoma of the hand and palm: a case report. Journal of Medical Case Reports, 5(1). https://doi.org/10.1186/1752-1947-5-552
4) Morales, C. a. M., Urquijo, M. G., Flores, L. F. M., Gallegos, M. N. S., & Shade, M. R. (2021). Giant intramuscular thigh lipoma: A case report and review of literature. International Journal of Surgery Case Reports, 82, 105885. https://doi.org/10.1016/j.ijscr.2021.105885
5) Arora, B. K. (2019). A case of giant lipoma of medial compartment of thigh with extension to adductor canal. International Journal of Case Reports and Images, 10, 1. https://doi.org/10.5348/101067z01ba2019cr
6) de Werra, C., di Filippo, G., Tramontano, R., Aloia, S., di Micco, R., & Del Giudice, R. (2016). Giant lipoma in the thigh A case report. Annali italiani di chirurgia, 87, S2239253X16024579.
7) Allen, B., Rader, C., & Babigian, A. (2007). Giant lipomas of the upper extremity. Canadian Journal of Plastic Surgery, 15(3), 141–144. https://doi.org/10.1177/229255030701500308
8) Kolb, L., Yarrarapu, S. N. S., Ameer, M. A., & Rosario-Collazo, J. A. (2023). Lipoma. In StatPearls. StatPearls Publishing.
9) Barisella, M., Giannini, L., & Piazza, C. (2020). From head and neck lipoma to liposarcoma: a wide spectrum of differential diagnoses and their therapeutic implications. Current Opinion in Otolaryngology & Head & Neck Surgery, 28(2), 136–143. https://doi.org/10.1097/moo.0000000000000608
10) Panagopoulos, I., Gorunova, L., Agostini, A., Lobmaier, I., Bjerkehagen, B., & Heim, S. (2016). Fusion of the HMGA2 and C9orf92 genes in myolipoma with t(9;12)(p22;q14). Diagnostic Pathology, 11(1). https://doi.org/10.1186/s13000-016-0472-8