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RECURRENT PRIMARY HIGH-GRADE SOFT-TISSUE SARCOMA OF THE BUTTOCK: A RARE BUT DISTINCT CLINICAL ENTITY.

General Surgery

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ABSTRACT

Soft tissue sarcomas (STS) are a rare and diverse group of malignant tumors arising from mesenchymal tissues. Liposarcoma, one of the most common STS subtypes, has varying biological behavior based on histologic grade. Well-differentiated liposarcomas are typically low-grade tumors with a high risk of local recurrence and minimal metastatic potential unless dedifferentiation occurs. High-grade variants are more aggressive and prone to distant spread, especially to the lungs. We present a rare case of a twice-recurrent, non-metastatic gluteal well-differentiated liposarcoma encasing the sciatic nerve, managed over a span of 12 years. Despite multiple surgical resections and the absence of metastatic disease, the tumor demonstrated persistent local recurrence, posing significant therapeutic challenges. The gluteal region, though an uncommon site, can harbour both low- and high-grade sarcomas, necessitating careful surgical planning due to anatomical complexity and proximity to critical structures. This case underscores the importance of a multidisciplinary approach, including imaging, histopathological assessment, and long-term surveillance, even in seemingly indolent tumors. MRI and core needle biopsy remain key diagnostic tools, while contrast-enhanced CT helps rule out pulmonary metastasis. Although local recurrence may not directly impact overall survival, prevention of dedifferentiation and distant spread remains crucial. In conclusion, gluteal liposarcomas require individualized, team-based management with emphasis on complete resection and prolonged follow-up. This report contributes to the limited literature on recurrent non-metastatic soft tissue sarcomas and reinforces the importance of vigilance in long-term care.

KEYWORDS

INTRODUCTION

Sarcoma are heterogeneous group of neoplasms that arise predominantly from cells of embryonic mesoderm. Majority are soft tissue sarcoma(STS) while other include bones. Primarily soft tissue sarcomas originate in extremities (50-60%) followed by trunk (19%), retroperitoneal (15%) and head and neck (9%). Most common histological types of STS is malignant fibrous histiocytoma (28%), liposarcoma (15%) , leiomyosarcoma (12%) and synovial sarcoma (10%). Overall 5 year survival rates of patients with all stages is 50-60%. of which most succumb to lung metastasis. [1]

Well differentiated liposarcoma is a low-grade, less aggressive subtype of soft tissue sarcoma with a significant risk of local recurrence and lesser of metastasis unless there is a focus of dedifferentiation. While dedifferentiated type is highly grade and more aggressive. [2]

We present an uncommonly reported case of twice recurrent non metastatic gluteal liposarcoma engulfing the sciatic nerve spanning for over a 12 year period. This case report emphasises the need for multidisciplinary care with careful surgical planning and follow up even after complete resection. It also contributes to the growing body of evidence on soft tissue sarcoma management and prognosis.

Gluteus maximus is the site with frequently diagnosed high-grade and low-grade STS. Low-grade STS respond well to surgery alone while high-grade STS require preoperative chemoradiation therapy, followed by surgery, and then postoperative chemotherapy. Work-up includes: a core needle biopsy for histopathological diagnosis, MRI for imaging of local disease and Contrast enhanced CT scan for pulmonary metastasis. Reduction of local recurrence does not lead to improved survival, but lack of disease progression with pulmonary metastasis does. [3]

Case Discussion

A 66 year old female housewife by occupation, a resident of Delhi presented to our outpatient department (OPD) with painless slowly growing mass in her right buttock for 6 years. The mass had significantly deformed her physical appearance and restricted her daily activities. No history of bowel and bladder disturbances. No history of chest pain, cough or hemoptysis. She had no significant medical comorbidities. She had undergone a debulking surgery in 2021 for the same mass. She did not undergo any radiation treatment following the surgery. She also provides a history of removal of a swelling from same site about 12 years back. She does not provide any history of cancers in her first degree family members.

Clinically there was a large lobulated mass at the lateral aspect of right gluteal region measuring approximately 15× 25× 35 cm. It was soft to firm in consistency extending to the subcutaneous tissues. It was not extending onto the perineal area. Previous incisional scar was noted over the swelling with large dilated subcutaneous veins all over the swelling. It was non tender and mobile. There was no sensory or motor deficits noted. All the distal peripheral pulses were palpable. Systemic clinical examination was within normal limits. Hematological and Biochemical work up all showed normal values.

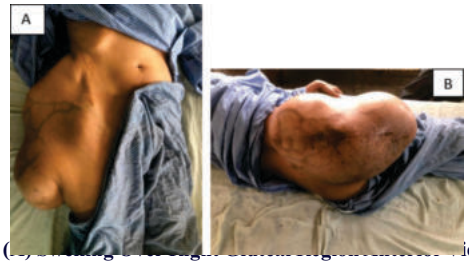

Fig. 1. ( ) ew (B) Lateral View

Reviewing her previous reports, the histopathological report from the debulking surgery stated that the mass was a Dedifferentiated Liposarcoma - Grade 2 (FNLCC). We proceeded to work her up for a

possibility of curative limb sparing wide local excision of her recurrent STS.

CECT suggested a large Ill-defined lesion of fat attenuation noted in right gluteal region involving gluteal muscles, approximately measuring 20×26×37 cm (AP×TR×CC dimensions). It was inferiorly extending into the pelvis via sciatic notch and causing mass effect in form of tilting of pelvis towards left side, mild displacement of pelvic organs. There was loss of planes with obturator interns and the mass abutting the right hip and great trochanter with no underlying periosteal and/or cortical erosion.

She also underwent nerve conduction study and had motor and sensory conduction within normal limits for right lower limb.

MRI report stated an ill-defined predominantly fat signal (T1/T2 hyperintense and T1 FS hypointense) lesion involving right gluteal region with multiple linear branching hypointense septa. It was measuring 18×22.7×28 cm (AP×TR×CC) involving right gluteus muscles, intermuscular planes and subcutaneous planes.

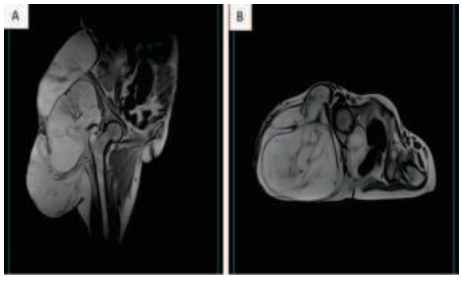

Fig. 2 MRI Showing Right Gluteal Tumor Lobulated Invading Gluteal Muscles Without Involving Skin (A) Sagittal Section (PD TSE) (B) Axial Section (T1W)

Patient's further management was discussed in a multidisciplinary meeting. Intraoperative orthopedic management was planned. Postoperative physiotherapy and radiotherapy was discussed for better management for the patient.

The patient was then posted for elective wide local excision of her recurrent STS. The skin was incised in elliptical manner to raise a skin flap over, followed by excision of the mass with gluteal maximus muscle and other muscles over the right pelvis exposing the right iliac crest and greater trochanter. The pseudopods extending into sciatic notch were also excised. Sciatic nerve was engulfed completely by the tumor and had to be sacrificed. Excised Tumor weighed 8.5 kg and measuring 14.5 ×29× 39 cm (AP×TR×CC). The defect closed over the bone by skin flaps with negative suction drainage catheter placement in the dead space created after the tumor excision.

She was discharged on post operative day 8. Patient was followed up in OPD a week later. Referrals were made to the regional cancer institute for initiation of adjuvant radiotherapy and also for limb physiotherapy.

Histopathological report confirmed well differentiated liposarcoma grade1 (FNLCC) with tumor <5mm from margins.

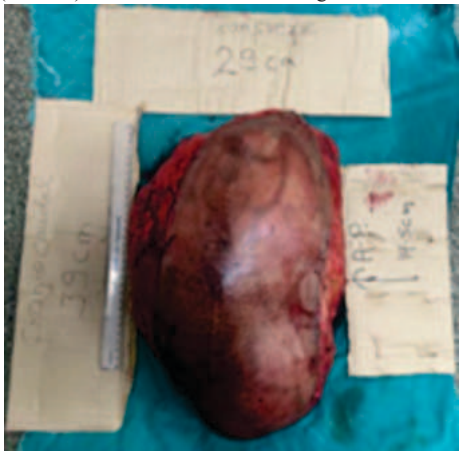

Fig. 3 Excised Tumor With Redundant Skin

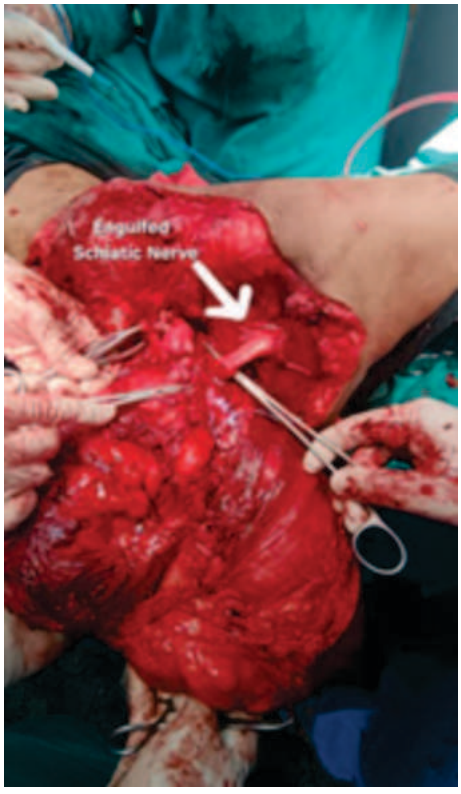

Fig. 4 Engulfed Sciatic Nerve

DISCUSSION

Adipocytic tumors represent the largest single group of mesenchymal neoplasms, due to the high prevalence of lipomas and their variants. Liposarcoma represents the single most common soft tissue sarcoma in adults, accounting for approximately 20% of all cases. Its principal histological subtypes; well differentiated, myxoid/round cell and pleomorphic are entirely separate diseases with different morphology, genetics and natural history. The principal changes in the recent WHO classification demonstrates that atypical lipomatous tumors and well differentiated liposarcoma are essentially synonymous and that site-specific variations in behavior relate only to surgical resectability.[4]

Soft tissue sarcoma can be brought about by DNA transformations that turn on oncogenes or turn off tumour suppressor genes, but they have discovered some risk factors that can make an individual bound to develop these malignancies some Inherited conditions retinoblastoma, Li-Fraumeni disorder, familial adenomatous polyposis, neurofibromatosis, tuberous sclerosis and Werner condition increase risk of sarcomas as well as radiation exposure and chemical materials as herbicides, arsenic and dioxin, may risk factors for STS.[5]

Peak incidence is considered between the 4th and 6th decade of life. Presentations is due to large mass restricting daily activities like walking long distances and lying in right lateral positions. [6]

A Magnetic Resonance Imaging (MRI) can help recognize the tumour's size and profundity since it plainly shows the tumour's relationship to normal muscle, fat, nerves, and veins. Computerized Tomography (CT) can be used to identify how much bone is engaged with a tumour. It is also valuable in distinguishing the malignancy's spread to the lungs, mid-region, and pelvis.[7]

Myxoid liposarcoma is highly radiosensitive, therefore, adjuvant radiation therapy is commonly utilized to control local spread, especially in patients with high grade, deep lesions of > 5 cm. Neoadjuvant radiotherapy can also be given in patients with myxoid liposarcoma (LPS) but surgical resection of tumor after it becomes difficult due to post-radiotherapy scarring of soft tissues, resulting in functionally inferior results. Radiotherapy acts by decreasing myxoid stroma produced by tumor cells, vascular damage, and adipocyte maturation. Neoadjuvant or adjuvant chemotherapy is also a treatment option for patients with ML. Neoadjuvant chemotherapy with anthracycline and ifosfamide in patients with large, high grade tumors

and in histological types like synovial sarcoma and myxoid liposarcoma has been found responsive. Adjuvant chemotherapy is given in patients with high risk of recurrence and metastatic disease .[8]

Our patient recovery was uneventful and has been planned for adjuvant radiotherapy based on tumor size and recurrent nature of the disease.

Buttock contouring and implants are methods of reconstruction with can be planned after patient is rehabilitated.

CONCLUSION

An unusual case of recurring gluteal liposarcoma with no metastasis was presented. Surgical excision is the main stay treatment for most primary soft tissue sarcomas and is excision is incomplete then post op radiotherapy can be opted for. Although not used here, be but neoadjuvant radiotherapy may play a role is giant and recurring liposarcoma. This case also underlines the significance of early surgical intervention for better functional results and avoiding gruesome metastatic symptoms. In this case patient is closely followed up clinically and radiologically for recurrence and metastasis.

REFERENCES

1. Schwatz principles of surgery 11th edition chapter 36 page no. 1567
2. Walker, Eric A., Joel S. Salesky, Michael E. Fenton, and Mark D. Murphey. "Magnetic Resonance Imaging of Malignant Soft Tissue Neoplasms in the Adult." Radiologic Clinics of North America 49, no. 6 (November 2011): 1219–34. https://doi.org/10.1016/j.rcl.2011.07.006
3. Saklani, Avanish, Seke Manase Ephraim KAZUMA, Mufaddal Kazi, Vivek Sukumar, and Avanish Saklani. 2021. "Recurrent Gluteal Sarcoma Managed with Unilateral Excision of Levator Ani Muscle: Case Report." Surgical Case Reports, January, 1–4. https://doi.org/10.31487/j.scr.2021.01.11.
4. Stock N. Tumeurs adipeuses [Adipocytic tumors]. Ann Pathol. 2015 Jan;35(1):41-53. French. doi: 10.1016/j.annpat.2014.12.001. Epub 2014 Dec 20. PMID: 25533918.
5. Cooper GM. The Cell: A Molecular Approach. 2nd edition. Sunderland (MA): Sinauer Associates; 2000. Tumor Suppressor Genes. Available from: https://www.ncbi.nlm.nih.gov/books/NBK9894/
6. Sultan M, Burezq H, Bang RL, El-Kabany M, Eskaf W. Giant gluteal lipoma-like liposarcoma: a case report. World J Surg Oncol. 2008 Jul 29;6:81. doi: 10.1186/1477-7819-6-81. PMID: 18664291; PMCID: PMC2517073.
7. Chang AE, Matory YL, Dwyer AJ, Hill SC, Girton ME, Steinberg SM, Knop RH, Frank JA, Hyams D, Doppman JL, et al. Magnetic resonance imaging versus computed tomography in the evaluation of soft tissue tumors of the extremities. Ann Surg. 1987 Apr;205(4):340-8. doi: 10.1097/00000658-198704000-00002. PMID: 3032120; PMCID: PMC1492735.
8. Tfayli Y, Baydoun A, Naja AS, Saghieh S. Management of myxoid liposarcoma of the extremity. Oncol Lett. 2021 Aug;22(2):596. doi: 10.3892/ol.2021.12857. Epub 2021 Jun 9. PMID: 34188698; PMCID: PMC8228380.