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Sarcoma of the Scalp Managed with a Scalp Rotation Advancement Flap

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Abstract **Case Report**

Sarcomas of the scalp are a large group of rare aggressive neoplasms of the head and neck originating from bony or soft tissue elements. Scalp sarcomas can present as small plaque-like lesions to multifocal nodules with involvement of deeper layers. The treatment plan depends on the extent and grade of the tumor. Most cases are managed surgically with three-dimensional wide excision and soft tissue reconstruction. Adjuvant radiotherapy and chemotherapy is limited to those cases with poor prognosis. Very few cases of sarcomas involving the scalp have been reported in the literature. Here, we present a case of a high grade sarcoma of the scalp treated by wide local excision and reconstructed with a scalp rotation advancement flap cover.

Key words: Sarcoma, Scalp, Rare, Mesenchymal, Multimodality Therapy.

INTRODUCTION

Sarcomas are malignant neoplasms of mesenchymal origin [1]. Sarcomas of the head and neck are rare tumours and account for less than one percent of all the head and neck malignancies [2]. They arise from bony or soft tissue elements, 80% are of soft tissue origin and only 20% are of bony origin [3]. Soft tissue sarcomas of the head and neck region are associated with high recurrence and mortality rates. Head and neck sarcomas account for more than fifty different histological types, the most common variants being malignant fibrous histiocytoma, angiosarcoma, malignant peripheral nerve sheath tumor and non-classified or non-differentiated sarcoma [4, 5]. Soft tissue sarcomas arising in the head and neck region have less overall survival rate and poor prognosis than those arising in the other sites due to the increased occurrence of aggressive histological types like fibrosarcoma & angiosarcoma and due to inadequate wide surgical margins [5]. The site of origin of these sarcomas play an important factor in treatment planning, taking into account the safe margin, aesthetics, post-operative function and quality of life.

CASE REPORT

A 50 year old gentleman presented to the Department of Plastic & Reconstructive Surgery with a growth in the region of the right parietal scalp since 5 months. It started as a small swelling and gradually progressed to the present size. The onset was insidious with no previous history of trauma in the same site. On examination, an ulceroproliferative growth of size 7 x 5cm was present in the region of the right parietal scalp. The margins were well defined with minimal induration. There was an ulcer at the summit of the swelling with occasional bleed on touch. The swelling was not warm or tender, firm in consistency, not friable, free from the underlying galea with no regional lymphadenopathy. A provisional diagnosis of a basal cell carcinoma was made. We planned for wide local excision and flap cover of the ensuing defect. Under general anaesthesia, the lesion was excised with a 2cm margin of clearance as an isosceles triangle and sent for

histopathological examination. The defect was resurfaced with a laterally based scalp rotation advancement flap. The flap and the secondary defect were closed primarily in layers with 3-0 polyglactin and 2-0 nylon sutures over a closed suction drain (Fig. 1 - 6). Post-operative was uneventful. Sutures were removed on the 10th post-operative day and the patient was discharged. Microscopic examination showed skin with adnexal structures and a neoplasm beneath composed of plump spindle to oval cells arranged in sheets, fascicles and vague storiform pattern. The cells have moderate eosinophilic cytoplasm and vesicular nucleus showing prominent nucleoli. There are scattered tumour giant cells with areas of palisading necrosis and tumour necrosis noted. The tumour is seen entrapping the adnexal structures with an increase in mitotic activity seen. All margins are free of tumour. These features are suggestive of a high grade sarcoma.

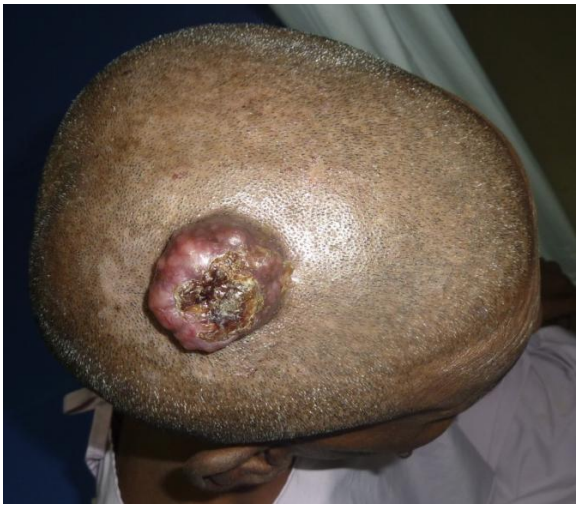

Fig-1: Clinical picture showing the lesion

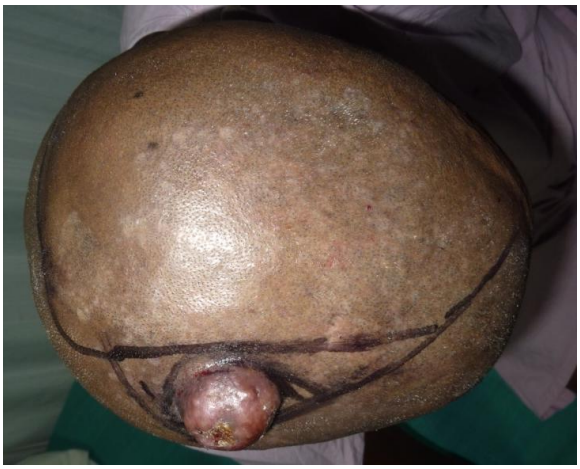

Fig-2: Markings for excision and for flap

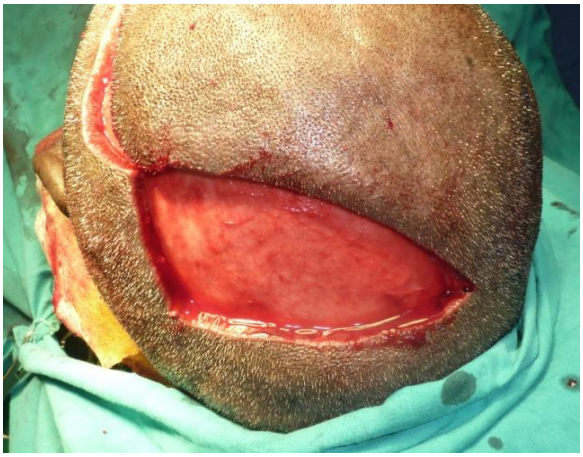

Fig-3: Defect after wide local excision

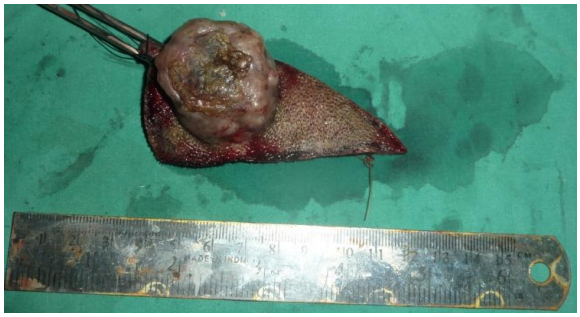

Fig-4: Specimen after excision

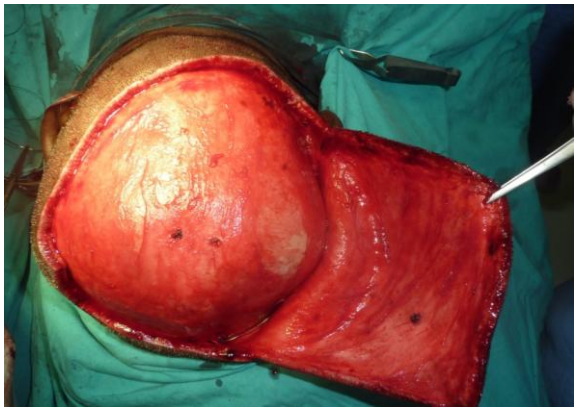

Fig-5: Elevation of rotation advancement flap

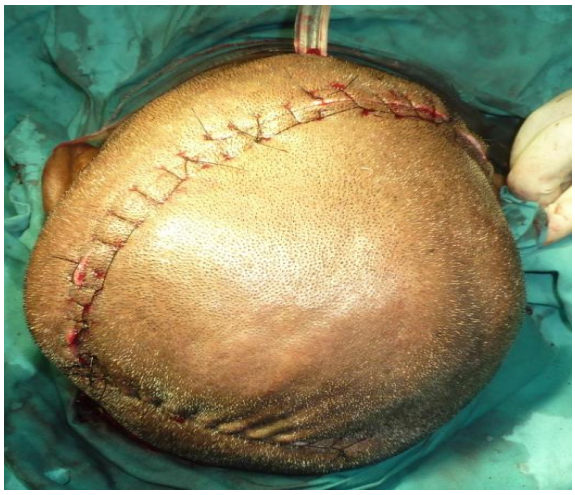

Fig-6: Immediate post-op picture

DISCUSSION

Soft tissue sarcomas of the head and neck are rare malignant mesenchymal neoplasms accounting for less than 10% of all soft tissue sarcomas and about 1% of all head and neck neoplasms [6-10]. But they represent an important group of tumours and are associated with significant morbidity and mortality. There are many histological subtypes of sarcomas which have varied presentations and many often require multimodality treatment with combination of surgery, radiotherapy, and chemotherapy. Tumours were classified as deep if they were deep to the investing fascia whilst they were superficial if they lay purely in the subcutaneous tissues. Enneking classified the margins of excision with a wide margin being one in which a clear layer of normal tissue lay between the tumour and the excision margin, a marginal excision when the excision plane passed through the reactive zone around the tumour (clear but close) and an intralesional excision was when tumour was incised at any part of the operation, even when a subsequent wide excision was achieved [11]. In patients presenting with a palpable lump, immediate referral for suspicion of soft tissue sarcoma should be made if the lump is greater than about 5 cm in diameter, deep to fascia - fixed, or immobile, painful, increasing in size or a recurrence after previous excision. The local recurrence rates for high-grade soft tissue sarcomas following surgical excision have been reported to be as high as 50% in the literature [8, 12, 13]. Some authors have shown that the risk of local recurrence was higher with intralesional or marginal surgical margins [7, 14]. The lungs were the most common site for metastases and were also the commonest cause of death. Mendenhall et al. suggested that patients should undergo a CT scan of the chest before treatment and also suggested that in the absence of pulmonary metastases, other distant metastases are highly unlikely [8]. Eeles et al. based at the Royal Marsden Hospital of London analysed 103 cases seen over 44 years between 1944 and 1988 and reported 50% overall 5-year survival rate [9]. This is similar to the results reported by Bentz et al. from Memorial Sloan Kettering Cancer Centre [15]. A meta-analysis published in Lancet revealed that chemotherapy did not produce a survival benefit in the treatment of soft tissue sarcomas [16]. Adjuvant chemotherapy is not usually advocated for localised soft tissue sarcomas but can be considered for metastatic disease as a palliative treatment. Recent guidance from NICE, UK in the management of patients with sarcomas has highlighted the importance of referring all patients with soft tissue sarcomas to a sarcoma centre where they can be managed by a multidisciplinary team [17].

CONCLUSION

Soft tissue sarcomas of the scalp are a group of rare tumors. Effective and judicious use of different diagnostic and therapeutic measures may improve the treatment outcome. A multidisciplinary treatment approach is needed in treating these tumors. Future studies and case series on these rare but aggressive tumors will definitely play a role in improving the survival rate of sarcomas.

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