



RECONSTRUCTION OF SUPRACLAVICULAR FOSSA DEFECT AFTER EXCISION OF DERMATOFIBROSARCOMA PROTUBERANS WITH DELTOPECTORAL FLAP: A CASE REPORT

Plastic Surgery

Dr. Munish Sharma* MS, MCLS, FNB, FALS(UGI) Assistant Professor, Department of Surgery Hindu Rao hospital & NDMC medical college, New delhi * Corresponding Author.

Dr. Anubhav Vindal MS, MRCS(Ed), FCLS, FACS Professor, Department of Surgery

Dr. Pawanindra Lal MS, DNB, MNAMS, FIMSA, FCRS(Ed), FCRS(Glasg), FCRS(Eng), FACS Director Professor, Department of Surgery

Dr. Saurabh Patel MS, Department of Surgery

ABSTRACT

Introduction: Dermatofibrosarcoma protuberans (DFSP) is a soft tissue tumor that originates from the dermis. Treatment options for DFSP include wide local excision and Mohs micrographic surgery. Deltopectoral flap is a versatile tool to reconstruct any defect in head and neck area arising from wide local excision of the tumor.

Case Report: We present a case of a patient who presented with DFSP on her right shoulder. After excision of tumor reconstruction of supraclavicular fossa defect was done with deltopectoral flap. Patient was sent for adjuvant radiotherapy. The patient has completed 1 year on follow-up and is doing well without any evidence of local or distant recurrence.

KEYWORDS

Dermatofibrosarcoma Protuberans, Deltopectoral Flap, Reconstruction

INTRODUCTION

Dermatofibrosarcoma protuberans is a soft tissue tumor that originates from the dermis.^{1,2} It is aggressive locally and have low metastatic potential. Dermatofibrosarcoma protuberans (DFSP) typically presents as a plaque on the trunk and less frequently on the extremities, but it may occur anywhere.³ Males are slightly more commonly affected than females and the male-to-female ratio is approximately 3:2. The tumor occurs in patients of all ages, with the highest frequency occurring in the fourth decade of life.^{4,5}

Treatment options for DFSP include wide local excision and Mohs micrographic surgery. Most authors recommend surgical excision with a margin of 2 to 3 cm of surrounding skin, including the underlying fascia, without elective lymph node dissection.⁶

Local recurrence is related to the adequacy of surgical margins. Conservative resection can lead to recurrence rates of 33% to 60%, whereas wider excision margins (greater than or equal to 2.5 cm) have been reported to reduce the recurrent rate to 10% to 25%.⁷

CASE PRESENTATION

We present a case of 50years old female patient who presented with rapidly progressive swelling on her right shoulder for 6 month duration. On clinical examination, it was a large lobulated ulceroproliferative swelling of around 10 x 7 cm size on the right supraclavicular region.

A provisional diagnosis of soft tissue sarcoma was made and an incisional biopsy was done which revealed homogenous spindle shaped cells in storiform and cartwheel pattern. There was focal presence of giant cells and at places these cells were seen entrapping fat. Tumor cells expressed CD-34 and Vimentin, typical of DFSP.



Figure 1: Clinical presentation

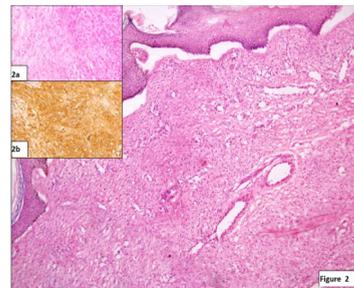


Figure 2: Histopathological picture shows a moderately cellular tumor in the dermis with a prominent storiform pattern of fibroblastic cells. There is no Grenz zone and overlying epidermis is flattened (H & E, 40X); Fig 2a: High power view shows monomorphic spindled out cells (H & E, 100X); Fig 2b: Immunohistochemistry shows strong positivity for CD34 (Diaminobenzidine as a chromogen, 400X)

Pre-operative CECT head and neck showed well-defined lobulated lesion of soft-tissue attenuation measuring 3.5x3.2 cm in subcutaneous plane at the root of neck on right side with no evidence of local or distant spread.

A Wide local excision was performed which resulted in a large triangular defect which was covered by raising a fasciocutaneous deltopectoral flap and rotating the flap medially and cranially (Figure 3). Pliability of skin resulted in tensionless suturing. Skin sutures were removed after 2 weeks and patient was sent for postoperative radiotherapy. The patient has completed 1 year on follow-up and is doing well without any evidence of local or distant recurrence.

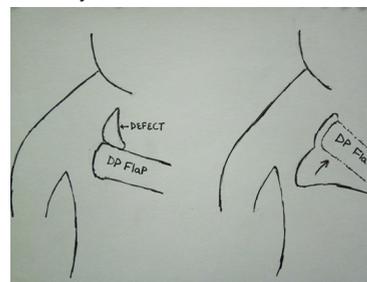


Figure 3: Schematic diagram

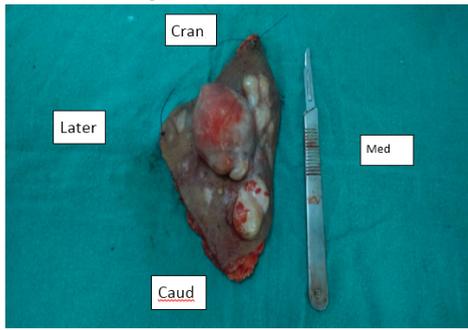


Figure 4: Specimen
(Cra – Cranial, Lat – Lateral, Med- Medial, Cau – Caudal)



Figure 5: Intraoperative picture of Right shoulder



Figure 6: Post-operative picture on day 3

DISCUSSION

For tumors located on trunk or extremities, wide local excision usually achieves tumor clearance with satisfactory cosmetic and functional result. However, removal of tumor by Mohs micrographic surgery, using frozen sections may be beneficial in sites where maximum conservation of normal tissue is required. DFSP of the head and neck has been reported to have a higher local recurrence rate (50% to 75%) than DFSP in other locations.⁸

The initial treatment for a localized dermatofibrosarcoma protuberans (DFSP) is resection with pathologically negative margins. Tumor size and location dictates the appropriate surgical procedure. As the metastases to lymph nodes are extremely rare⁹, there is no role for prophylactic regional node dissection. Radiation therapy may be recommended for patients if the margins of resection are positive or for situations in which adequate wide excision alone may result in major cosmetic or functional deficits. Postoperative adjuvant RT may reduce the risk of recurrence when clear surgical margins are not confident.¹⁰ The complete radiation therapy dose ranges from 50-70 Gy.

Deltopectoral (DP) flap is a thin, pliable pedicled fasciocutaneous flap based on 2nd and 3rd internal mammary artery with minimal donor site morbidity and excellent color and texture match to head and neck area.¹¹ DP flap is indicated for patients with skin or mucosal defect in the head and neck region that require reconstruction but is not suitable for microsurgical procedure (e.g., lack of suitable recipient neck vessels due to previous treatments) and where bulkiness of pedicled myocutaneous flaps can be cosmetically unpleasant. DP flap may also be utilized in management of release of neck contractures or skin necrosis from radiation therapy. It is contraindicated when internal

mammary artery has been compromised, for instance, from previous cardiac surgery.

DFSP is a radioresponsive tumor, and combined conservative resection and postoperative radiation should be considered in situations in which adequate wide excision alone would result in major cosmetic or functional deficits.¹² DP flap is a versatile tool to reconstruct any defect in head and neck area arising from wide local excision of the tumor.

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