



Reconstruction - A boon in management of large malignancies - A study of two Truncal reconstructions

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Abstract : Reconstruction after wide local excision of large skin malignancies can be formidable. Many tumors lie close to vital structures, and excision must carefully balance preservation of form and function. For small defects, primary closure or skin grafting is satisfactory. However, it has become increasingly evident that more advanced reconstructive procedures can improve the outcome in terms of both function and aesthetics. We are presenting two cases where reconstructive procedures helped in tackling large a primary with least morbidity to the patient

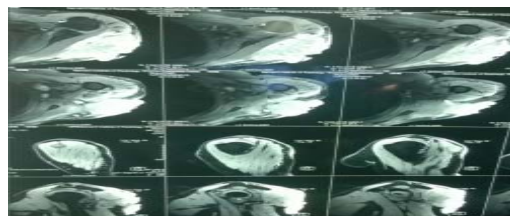
Keyword : Skin Malignancies, Flaps, Reconstruction

CASE 1 :

54 year old male with history of ulceroproliferative lesion in the back of left shoulder for past two years. H/o foul smelling discharge and h/o fever was present with no other significant present history. There was no restriction of movements and no history suggestive of metastatic disease. The general condition of the patient was good with no signs of pallor, icterus, clubbing or pedal edema. His vitals were stable. Local examination revealed a 10 X 10 cm fungating proliferative growth over the posterior aspect of left shoulder. Margins ill-defined. Base indurated. Fixed with purulent discharge from the lesion present. Was associated with surrounding skin thickening. No active bleeding from the lesion. Restriction of movement of limb present. No distal neurovascular deficit. 1 x 0.5cm firm, non tender, mobile node in the central group in the left axilla. Opposite limb and axilla appears to be normal. Provisional diagnosis of squamous cell carcinoma of left shoulder region was made.



Clinical Examination



MRI local part

Wedge biopsy from the edge of the ulcer showed well differentiated squamous cell carcinoma. FNAC of the left axillary nodes shows reactive lymphadenitis. MRI revealed a 10.6 X 7.6 X 4.6 CM t1/t2 isointense, hyperintense on PD noted in the skin and subcutaneous plane of left shoulder infiltrating the posterior aspect of deltoid muscle indenting on the supraspinatus muscle. Underlying bone was normal. Patient was discussed in tumor board and planned for Tikhoff-Lindberg procedure with turnover LD flap.



Operative pictures



Operative Procedure : An elliptical lesion encircling and 2cm away from the lesion made. Incision deepened and dissection performed around the shoulder girdle. Deltoid, trapezius, serratus anterior muscle attached to the medial border and subscapularis muscle on the anterior surface of scapula is cut. Levator scapulae, rhomboid major and minor attached to the medial border of scapula along the posterior surface is dissected and cut. Lattismus dorsi attached to the inferior angle of scapula is cut and separated. Muscles of rotator cuff attached to the humerus head separated. Vessels forming anastomosis around the shoulder joint like suprascapular artery, subscapular artery and anterior and posterior circumflex artery cut and ligated. Entire scapula along with the joint capsule preserving the coracoid process was removed. Clavicle and humerus preserved. Vipro mesh of size 15*15cm was fixed double and used to artificially recreate the capsule. Anchoring sutures were taken in the remnant capsule of shoulder joint on humerus, retained coracoid process and clavicle using 1-0 prolene. Reverse LD flap was given as muscle cover over the excised area. DT was placed. SSG from thigh was done over the muscle flap using Tissel fibrin glue. Post operative histopathology turned out to be well differentiated squamous cell carcinoma with infiltration into muscle. Patient was then taken up for electron therapy by radiation oncologists. Patient had an uneventful post op recovery with good wound healing.



CASE 2 :

60 year old male presented with complaints of swelling in the left side of chest wall for six years, gradually increasing in size with recent onset history of pain, discharge from swelling, loss of weight and loss of appetite. No other significant past or present history. Patient general condition was fair with stable vitals. Local examination revealed a 15*10*10 cm proliferative horny swelling in the Lt hypochondrium and Lt lumbar region, hard, fixed with central sloughing. 1*1cm firm node in the central group of Lt axilla. No inguinal lymphadenopathy.



CLINICAL EXAMINATION

MRI showed Irregular, ulcerative, necrotic mass in the Lt lateral thoraco abdominal wall (D12 to L3 region measuring 9 * 9 * 9 cm. Mass is seen in muscles, intermuscular, subcutaneous and cutaneous planes. intra peritoneal extension noted. The angles of Lt 10th & 11th ribs show focal irregularities with signal alterations indicating involvement. Biopsy came back as well differentiated squamous cell carcinoma. Patient was discussed in tumor board and planned for wide local excision including the ribs with axillary and inguinal block dissection with double rotation flap planned.



INTRA OP PICTURES



POST OP

Operative procedure : Wide local excision of the swelling with excision of 8th to 12th ribs / axillary and inguinal block dissection done. Defect reinforced with prolene mesh. Serratus anterior and lattismus dorsi muscle flap with rotation skin flap to cover the muscle. Suction DT kept in axillary, inguinal, over and under the flap cover & subcutaneous plane. Patient developed minimal flap necrosis which was allowed to heal by secondary intention. Biopsy came as moderately differentiated squamous cell carcinoma with invasion into muscles and bones with all eighteen nodes free of tumor invasion. Patient transferred to radiation oncology for adjuvant treatment.

DISCUSSION :

Non melanomatous skin cancers, which include squamous cell carcinoma and basal cell carcinoma, are good prognostic tumors with primary surgical excision with adequate margins yielding cure rates > 90%. The drawback in these surgeries was their propensity to involve vital areas like head and neck or large surface areas which makes primary surgical excision a highly morbid process. Till a couple of decades ago, the standard of care for the first patient would have been forequarter amputation while in the second case, palliation would have been the norm. With the advent of reconstructive procedures and newer prosthetic meshes and substitutes, the management of such malignancies had turned towards extensive excision while still preserving form and if possible function too. In all these cases the three tenets of surgical resection should be maintained :

1. Sufficient amount of tissue removed to ensure negative margins
2. Replacement of rigid structures which provide support, example ribs, etc
3. Healthy soft tissue coverage

Skeletal reconstruction is achieved by fascia lata, ribs, prosthetic materials like metals, methyl methacrylate etc. Ideal characteristics of prosthetic material includes - - Rigidity, Inertness - to allow ingrowth of fibrous tissue and avoid infection and Radiolucency - for radiological follow up of underlying cause. Soft tissue reconstruction is achieved by myocutaneous flaps which Lattismus Dorsi muscle flaps, Pectorals Major, Deltoid, Serratus Anterior or Trapezius muscle flaps. Free flaps like radial forearm flap, fibular flap which requires microvascular surgical expertise have further revolutionised and provided added strength to the reconstruction armamentarium.

CONCLUSION :

Surgery is the primary modality of treatment for skin malignancies. The boundaries of operable and inoperable tumors has come down with the advent of reconstruction procedures. Although primary closure is the ideal method of reconstruction for small defects, flap closure provides a versatile and safe alternative when simple closure would yield unsatisfactory results. With careful planning, flap closure and use of prosthetic appliances offers an exceptional functional and aesthetic result and may even enhance contour defects after extensive dissections to give adequate oncological clearance therein improving the quality of life.

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