

Tumour Recurrence At The Donor Site Of The Pectoralis Major Myocutaneous Flap With A Tumour Free Index Site

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Abstract

Isolated tumour recurrence at the donor site of the pectoralis major myocutaneous (PMMC) flap with a tumour free index site has, to our knowledge, not been reported.

We report two such cases where metastatic spread at the donor site of the PMMC flap was identified without any apparent persistence or recurrence at the index site.

The modes of tumour spread and aspects of prevention are discussed. Our cases are probably in keeping with the implantation theory and therefore to prevent this, consideration to extend the radiotherapy field to include the donor site as well may be given.

INTRODUCTION

Pectoralis major myocutaneous flaps have been used extensively in the reconstruction of major head and neck defects. In particular, in head and neck surgical oncology, its relative ease and frequency of use has earned it the title of 'work horse' of head and neck reconstruction.

Although, complications resulting from reconstructive procedures involving pectoralis major myocutaneous flaps have been extensively described^{1,2,3}, there have been only a few reports where metastatic spread has been described at the base of the pedicle. In each case, this has been associated with index tumour persistence or loco-regional recurrence

^{4,5,6}

The complication presented here, has to our knowledge, not been previously reported. We report two cases of metastatic deposit at the donor site of pectoralis major myocutaneous flap without evidence of recurrence or residual tumour at the primary (index) site.

CASE REPORTS

CASE ONE

A 53-year-old man was referred by his general practitioner in February 2000 with an enlarged right tonsil and an ipsilateral neck lump. Following clinical examination, imaging, examination under general anaesthesia and biopsy,

he was diagnosed as having squamous cell carcinoma of right tonsil staged as T3 N1 M0. Subsequently, he underwent combined oropharyngeal resection, ipsilateral type I modified radical neck dissection and reconstruction with a pectoralis major myocutaneous flap. His postoperative recovery was uneventful. He received 6600 cGy radiotherapy using photons over the ensuing six and a half weeks to the primary site and both sides of the neck. Treatment was completed in June 2000.

He was kept under surveillance in the combined oncology clinic every four weeks.

He presented in May 2001, almost one year later, with a right infraclavicular swelling at the donor site of pectoralis major myocutaneous flap (Photograph 1). This was positive for malignancy on fine needle aspiration. His index site and remaining upper aero digestive tract was examined under general anaesthesia but this did not reveal any evidence of recurrence. He underwent anterior chest wall resection. There was extension of tumour to the ribs and resection was macroscopically incomplete. The defect was closed using modified delto-pectoral flap and a split skin graft. He received 5000 cGy radiotherapy using electrons to anterior chest wall.

Figure 1

Photograph 1: Infraclavicular metastatic lump



Four months after the anterior chest wall resection, he died of bronchopneumonia without any apparent recurrence or residual disease at the primary site.

CASE TWO

A 61-year-old man was diagnosed as having squamous cell carcinoma involving his tongue and tongue base staged as T3N1M0 in November 1993. He underwent combined oropharyngeal resection, radical neck dissection and reconstruction with pectoralis major myocutaneous flap followed by postoperative radiotherapy.

His recovery was uneventful and was kept under surveillance in the combined clinic.

In August 1994, he presented with a lump on the chest wall at the site of incision for myocutaneous flap (Photograph 2). Biopsy proved it to be metastatic squamous cell carcinoma. However, his index site was free of recurrence and therefore he was treated with a course of local radiotherapy to his chest wall.

Figure 2

Photograph 2: Chest wall metastases



He passed away in October 1994 without any apparent recurrence at the primary site.

DISCUSSION

The Pectoralis major myocutaneous flap is a reliable technique for transfer of tissue for reconstruction of head and neck defects. Complications associated with it are well documented but uncommon^{1,2,3}. However, recurrent tumour at the base of the pedicle with a tumour free index site has, to our knowledge, not been previously reported. Previous reports of this unusual complication have all been in association with persistence or recurrence of the disease at the primary (index) site^{4,5,6}.

There are various routes by which a tumour may spread along myocutaneous flaps; local invasion through contiguity and tissue planes, blood borne metastases, lymphatic metastases and tumour implantation^{5,6}. The mechanism of

spread in our cases is open to speculation. In the absence of systemic metastases and tumour free index site, our cases would probably be in keeping with an implantation theory.

We would therefore agree with previous authors^{4,7} that routine intraoperative measures to prevent tumour spread such as thorough irrigation of the wound, change of the instruments, gowns and gloves after tumour ablation and prior to reconstruction are undertaken to prevent intraoperative seeding.

If tumour cell seeding is thought to be one of the ways of spread then consideration of extension of radiotherapy field to include the donor site may be given.

CONCLUSION

In the follow up of head and neck cancer patients who have undergone reconstruction with a myocutaneous flap, the possibility of distant metastatic spread to the donor site should be borne in mind and both donor and index site carefully monitored. To prevent it occurs, serious consideration should be given to thorough wound irrigation, change of the instruments, gowns, gloves and possibly even extension of radiotherapy field to include the donor site.

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References

1. Ossoff RH, Wurster CF, Berktold RE, Krespi YP, Sisson GA. Complications after Pectoralis Major Mycutaneous Flap Reconstruction of Head and Neck Defects. *Arch Otolaryngol* 1983;109:812-4.
2. Maisel RH, Liston SL, Adams GL. Complications of Pectoralis Myocutaneous Flaps. *Laryngoscope* 1983;93:928-30.
3. Biller HF, Baek S, Lawson W, Krespi YP, Blaugrund SM. Pectoralis Major Myocutaneous Island Flap in Head and Neck Surgery. Analysis of Complications in 42 cases. *Arch Otolaryngol* 1981;107:23-6.
4. Robbins KT, Woodson GE. Chest Wall Metastasis as a Complication of Myocutaneous Flap Reconstruction. *J Otolaryngol* 1984;13:13-4.
5. Badellino F, Berrino P, Campora E, Canvese G, Galli A, Margarino G, et al; Metastatic Spread of Floor of the Mouth Squamous Cell Carcinoma via Pectoralis Major Mycutaneous Flap. *J Surg Oncol* 1988;38:45-7.
6. Ellison DE, Hoover LA, Wars PH. Tumour Recurrence Within Myocutaneous Flaps. *Ann Otol Rhinol Laryngol* 1987;96:26-8.
7. Cole WH. The mechanism of spread of cancer. *Surg Gynecol Obstet* 1973;137:853-71.

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