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# Combined ipsilateral neck and axillary lymphadenectomy for metastatic skin cancers: A case series and surgical tips

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## KEYWORDS

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Claviclectomy;  
Claviculotomy

**Summary** In the absence of distant disease simultaneous skin cancer metastasis to neck and axillary lymph nodes necessitates both an axillary and neck en block lymphadenectomy. A combined ipsilateral neck and axillary lymph node dissection should involve an incontinuity dissection through the cervicoaxillary canal for optimal lymphatic and oncological clearance. Review of the literature reveals little published instruction on the procedure since the radical surgery performed by Bowden over 50 years ago. We present 4 cases where ipsilateral axillary and neck lymph node dissections were performed for metastatic melanoma and a case of apical axillary node dissection via a neck incision approach. Our surgical tips include performing apical axillary node dissection via the neck incision and consideration of clavicular osteotomy or clavicular excision. A transclavicular approach was taken in one patient who had an excellent functional outcome after a plate and screw fixation. One elderly patient required a middle third claviclectomy which reduced shoulder elevation but was not associated with functional impairment. We conclude the surgery is safe and associated with the usual morbidity ascribed with either an axillary or neck dissection undertaken in isolation. However, patients have a significant risk of disease relapse as would be expected due to the dual metastatic sites, multiple lymph node and neck involvement which are known to be independent poor prognostic factors on melanoma survival and relapse.

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## Introduction

Melanotic and non-melanotic skin cancers may metastasise via the lymphatic system. A lymph node metastasis may be

apparent at the time of primary diagnosis or present as a disease relapse after an interval of time from the initial diagnosis. Lymph node disease may present clinically or radiologically as a mass, or as occult disease within a

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Sentinel Lymph Node Biopsy (SLNB). En bloc lymphadenectomy of the lymph node basin containing the metastasis is the recommended management<sup>1</sup> providing the patient is medically fit to undergo surgery. When the primary cutaneous disease has been completely excised and there is no evidence of distant metastatic spread (i.e. in stage III disease) lymphadenectomy can be undertaken with curative intent. In the event of inoperable distant metastases (stage IV) then a lymphadenectomy may be performed as a palliative procedure to obtain locoregional disease control.

Simultaneous metastasis to multiple lymph node basins may occasionally happen. This necessitates multiple sites of en bloc lymphadenectomy. Primary tumours of the head, neck, upper limbs and upper trunk can metastasise to both the neck and axillary lymph node basins. The lymphatic system of the posterior cervical triangle (level Vb) is in continuity with the ipsilateral superomedial (level III) axilla in the region surrounding the axillary vessels and brachial plexus. This channel between the posterior neck and axilla, the cervicoaxillary canal, provides a route for metastatic spread. A combined ipsilateral neck and axillary dissection therefore should involve complete clearance of lymphatics within the cervicoaxillary canal. Anatomical barriers often make a true in-continuity dissection difficult.<sup>2</sup> There is little published instruction on techniques to perform combined axillary and neck dissection. We present 4 cases where ipsilateral axillary and neck lymph node dissections were performed for metastatic melanoma and a case of apical axillary node dissection via a neck incision approach. The indications, complications, outcomes and surgical tips and controversies are also discussed.

## Method

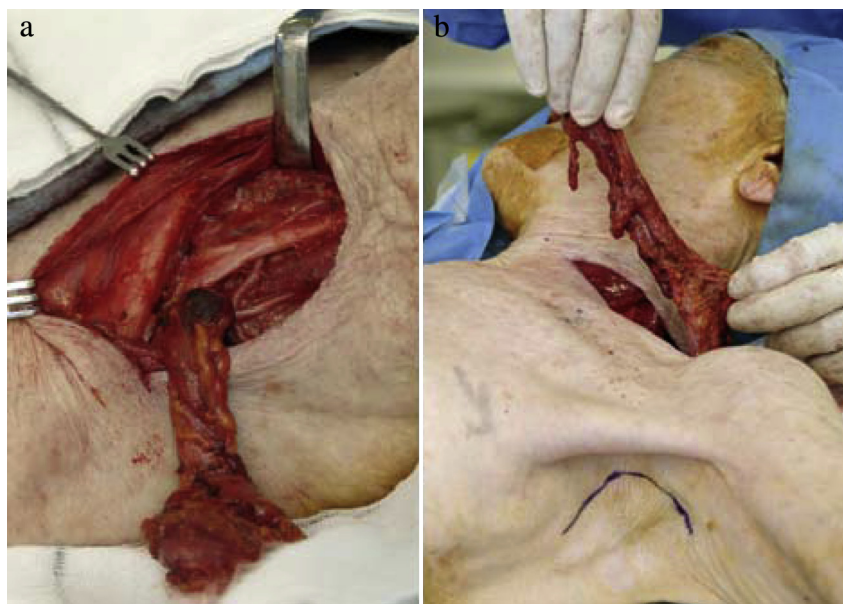
Patients who had combined axillary and neck dissections between 2009 and 2012 were identified from theatre

logbooks and their case notes reviewed. Data was collected on patient characteristics, indication for surgery, surgical management, complications and disease free survival.

## Surgical technique

Patients are placed in the supine position with the ipsilateral arm extended on an arm board. The arm board fixes to the operating table with a movable hinge that allows intraoperative abduction and adduction of the shoulder as required. The head is positioned slightly higher than the rest of the body and rotated to face the contralateral side. The face, neck, upper chest, axilla and upper arm are exposed and prepared.

The neck dissection is performed first whilst the patient's arm is in full adduction. The extent of surgical excision (radical, modified or selective) is determined by pre-operative assessment and intraoperative findings; however, the surgical incision should be designed to allow adequate exposure of the root of the neck. The approach for a level IV and Vb clearance is to make a transverse supraclavicular incision, approximately 2 fingers breadth above the clavicle. The incision extends from just lateral to midline medially to the edge of trapezius laterally. The en bloc lymph node dissection starts cephalically and continues caudally towards the lower posterior triangle (level Vb) leading to the apex of the axilla (Figure 1a). The lymph node containing tissue behind the midclavicle, connecting the root of the neck to apex of the axilla is soft, thin and delicate. It does not tolerate forceful traction and dissection is more accessible through the neck incision than the axillary route. Fat and connective tissues containing lymph nodes are carefully stripped from the neurovascular structures passing through the cervicoaxillary canal. The apical axillary nodes are also often found to be more accessible via the neck incision and therefore dissected in this stage.



**Figure 1** Intraoperative photographs (of patient 3): (a) Superolateral view showing clavicle anteriorly with neck lymphadenectomy specimen extending down the cervicoaxillary canal. Note the black metastatic melanoma mass in the supraclavicular fossa. (b) Inferolateral view showing marking for axillary incision and neck lymphadenectomy specimen in continuity with the apex of the axilla.

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