Injury to the long thoracic nerve as a complication of neck dissection: A case report

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Received 6 August 2004; accepted 24 February 2005
Available online 15 July 2005

Abstract

Injury to nerves by dissection of the neck is well recognised. A case report of injury to the long thoracic nerve follows, which has not been previously described.

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Introduction

Injuries to nerves caused by dissections in the neck have been well described, and include those to the brachial plexus, phrenic, spinal accessory, and the marginal mandibular branch of the facial nerve (Eibling, 1997; Watkinson et al., 2000a, 2000b). A case of injury to the long thoracic nerve of Bell (nerve to the serratus anterior) resulting from neck dissection for the treatment of metastatic melanoma is reported. This complication has not been described previously.

Case report

A 21-year-old White man presented with a cutaneous malignant melanoma in the left supraclavicular fossa that had been treated by tangential excision elsewhere. An accurate measurement of the Breslow thickness was not possible because of the technique of removal. The clinical appearance indicated that it was a thick tumour.

The patient was admitted for treatment by wide local excision and sentinel node biopsy. Lymphoscintigraphy showed that there was a single node adjacent to the insertion of the left sternoclidomastoid muscle, which was identified intraoperatively and removed for histological examination. The patient made an uneventful recovery and was discharged on the first postoperative day.

The sentinel node contained metastatic disease. The patient was offered a Type I selective dissection of the neck and had a total body computed tomogram for staging purposes, which showed no metastases. As the patient would not tolerate a short delay in being operated on the National Health Service, he was operated on at a private hospital elsewhere. Subsequently, he returned to our unit for follow-up. Clinical examination showed winging of the scapula (Figs. 1 and 2). This had been noted immediately postoperatively.

Six months later there was no improvement in the extent of scapular winging.

Discussion

The long thoracic nerve arises from the brachial plexus close to the origin of C5, C6, and C7 from the intervertebral foramina. The roots at the C5 and C6 level both pierce the scalenus medius muscle, whereas the root at the C7 level passes anterior to the muscle (Berry et al., 1995). The three roots join to
The injury seems to have occurred at the time of dissection of the neck. The notes of the operation do not mention any complications at the time of surgery. Either the course of the nerve was aberrant and ran superficial to the muscles (making it more susceptible to injury) or the plane of dissection traversed the deep fascial plane. This is conceivable if the main bulk of the tissue to be excised was retracted forcibly, causing tenting of the deeper structures.

Although winging of the scapula can occur from injury to the spinal accessory nerve, a recognised complication of neck dissection (Eibling, 1997; Watkinson et al., 2000a, 2000b), the resultant pattern of winging differs from that seen after injury to the long thoracic nerve. Injury to the spinal accessory nerve, which causes paralysis of the trapezius, results in drooping of the shoulder girdle, with downward and lateral translation of the scapula in addition to winging (Wiater and Bigliani, 1999). In contrast, patients with injury to the long thoracic nerve, which causes paralysis of the serratus anterior, have scapular winging with medial rotation of the scapula, rotation of the inferior angle towards the midline, and prominence of the vertebral border (Wiater and Flattow, 1999). The deformity is accentuated by attempts to abduct the arm (Warner and Navarro, 1998).

References


