

## Indication for surgery of spinal metastases within the cervical region

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### Abstract

A 40-year-old female patient developed a nearly complete tetraparesis within two weeks. Neurological examination showed nearly complete tetraparesis, complete sensory impairment from the level of C4 and hyperreflexia of tendon jerks. Radiological examination showed a space occupying lesion with an extraspinal extension. Operative decompression was carried out and the patient recovered completely within 3 months.

**Keywords:** Indication for surgery, tetraparesis, thyroid carcinoma metastases.

### 1 Introduction

Metastatic carcinomas are most prevalent in men over 50 years of age. TORMA [7] reported that extradural tumors constitute 20 to 30 percent of all spinal tumors. The most common spinal metastases originate from cancer of lung, breast, prostate, and kidney and from sarcomas and lymphomas. Thyroid cancer rarely generates spinal metastases [3]. The most frequent site of spinal metastases is in the thoracic area. Clinically the patient presents with a short history of root pain and localized backpain which is followed by progressive long tract signs. The treatment of these lesions depends mainly on the symptoms as well as on the identification of the primary tumor. If the patient's primary tumor is known and he has not developed motor weakness, dexamethasone therapy followed by radiation is the treatment of choice [2, 4, 7]. If motor signs are present, decompressive laminectomy followed by radiation therapy is the treatment of choice [2, 4, 7].

Experience has shown that operative decompression in patients with complete motor signs is not effective, especially when the disability developed over a short period of time [1].

The results of treatment of spinal metastatic lesions vary according to the primary tumor. Poorest results

are found in patients with lung cancer and melanomas. Best results are seen in patients with lymphomas. Good results are reported in patients with cancer of the breast, kidney, and thyroid [3, 6]. We present a case which could contribute to the discussion about the operative treatment of spinal malignancies.

### 2 Case report

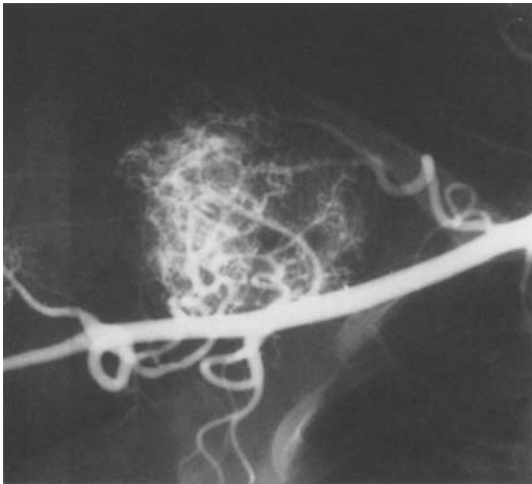
A 40-year-old libyan female patient was admitted with nearly complete tetraparesis; minimal movement of the toes was possible. Examination of the cranial nerves showed no deficits. Sensory impairment with analgesia and anesthesia from the level of C4 was evident. Hyperreflexia of the tendon reflexes of all extremities was elicited. The motor weakness had developed in a quick progressive course over two weeks. X-ray examination of the cervical spine showed destruction of the lamina of C2 (Figure 1).



**Figure 1.** X-ray of the cervical spine showing the destruction at the lamina of C2.



**Figure 2.** Myelography demonstrating a complete stop of contrast medium at the level of C3.



**Figure 3.** Vertebral angiography showing vascular enhancement of the tumor in the right axilla.

Computed tomography showed a large tumor with an extraspinal extension in the cervical region. Myelography demonstrated a complete stop at the level of C3 (Figure 2). The vertebral arteries were not compressed or infiltrated by the tumor. Angiography showed two tumors in the right axilla and right arm (Figure 3).

Emergency operative decompression was performed the next day after admission. The tumor was completely removed. Histological examination suggested a metastasis of a follicular carcinoma of the thyroid.

The postoperative course was uneventful. The neurological deficit showed a rash recovery of the motor weakness and of the sensory deficit. The patient was subjected to thyroidectomy and was treated postoperatively with radioiodine therapy. The neurological examination 3 months later showed complete recovery of the motor deficit. A follow-up examination about one year postoperatively showed no signs of motor impairment.

### 3 Discussion

According to the literature, surgery of spinal malignancies is of no benefit if there is complete tetraparesis. In this particular case we decided on an operative treatment in the young patient because an immediate decompression of the medulla presented the only possible hope for a recovery. In addition, although a history of an thyroid operation 10 years ago was known, the exact nature of the thyroid disease or the extent of thyroidectomy was not known, so that we saw a chance of a possible successful treatment of the primary tumor. The results of the histological examination and the postoperative course of the disease suggest hope for recovery. This case should throw some light on the indications for operative decompression in patients with rapidly progressive and completely developed paraplegia. It seems to us that operative decompression has a fairly good chance of being successful in patients with cervical spinal metastases. This chance is not offered by dexamethasone therapy and/or irradiation, alone. It can be concluded, at least, that the indication for operative decompression should be discussed in every individual case, again.

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