

### Giant schwannoma of the axilla: a case report

S. Braun, T. Dietrich, M. Richter, A. Flade, D. Uhlmann  
Department of Surgery, Klinikum Döbeln, Germany

**Key words:** Schwannoma; axillary swelling

#### Introduction

Schwannomas are common tumours of the peripheral nervous system, which originate in the embryonic neural crest cells of the peripheral nerve sheaths [1]. Schwannomas can occur in isolation or as part of syndromes such as neurofibromatosis I and neurofibromatosis II. In 73% of cases, solitary benign schwannomas affect the upper limbs [2]. They can also appear in other areas, for example, on the inner thoracic wall [3], the retroperitoneum [4], or the orbita [5]. Symptoms are caused by the suppressing growth of the tumor and involve pain, weakness of the limb, or paraesthesia [6]. Most schwannomas are asymptomatic. In general, schwannomas are diagnosed radiologically by CT and MRI scanning. To confirm the diagnosis histologically a fine needle aspiration maybe carried out. Surgical excision is the treatment of choice.

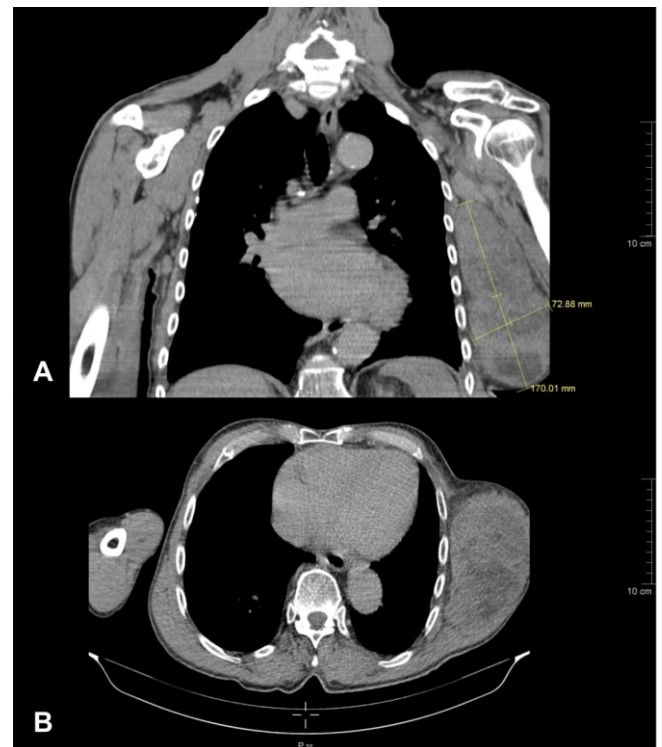
#### Case Report

An 83-year-old male initially presented at the emergency room with an incarcerated inguinal hernia. During the physical examination, a giant tumour in the left axilla attracted attention (Figure 1). The patient reported that the tumour had been growing slowly over two to three years and was not causing pain or interfering with work. In addition, there was no neurological deficit in the left arm. Lipomatosis was also in evidence all over the patient's body, especially on the thoracic and abdominal walls. The aspect of the axillary tumour was malignant, and the ultrasound showed an inhomogeneous tumour with a cystic aspect. Thus, a CT scan was performed to search for the primary tumor. A CT of the abdomen, thorax, and neck revealed no primary tumour or lymph node enlargement. The

axillary tumour was described as an axillopectoral inhomogeneous soft tissue measuring 17 x 8 cm (Figure 2).



**Figure 1.** Aspect of the patient front view (A) and side view (B); \* axillary tumour \*\* and additional tumour of the thoracic wall.

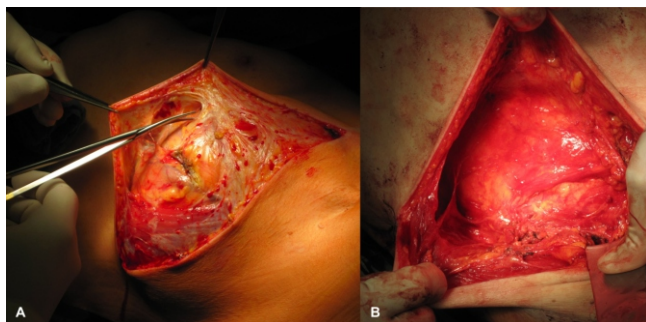


**Figure 2.** CT scans of the axillary mass. The tumour is located on the left side axillopectorally and described as an inhomogeneous mass (coronal (A) and axial (B) images).

Because of the uncertain malignant potential of the tumour, a fine needle aspiration was performed. The histology of the tumour showed spindle-shaped cells,

Correspondence: D. Uhlmann  
E-mail: dirk.uhlmann@klinikum-dobeln.de

and immunohistochemical staining was positive for S100. Thus, the tumour was diagnosed as a schwannoma. During a second surgery, the tumour was removed under general anesthesia conditions. To enable this, the patient was placed in a lateral position on the right side. An incision of the skin was made directly over the tumor along the middle axillary line, and the tumour was completely removed (Figure 3). During this surgery, a lipoma on the left thoracic wall was also excised (\*\* in Figure 1).

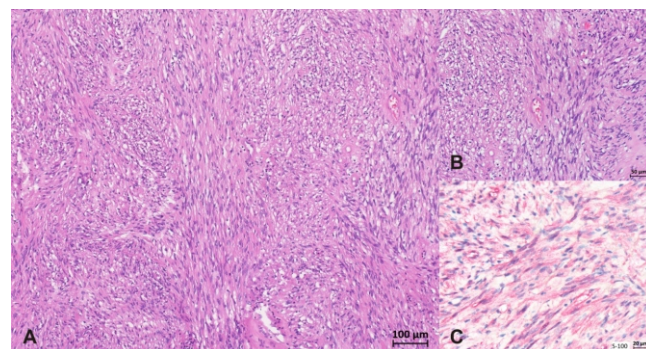


**Figure 3.** Operative view: an encapsulated tumour of the axilla at the beginning (A) and after resection (B).

A pathological and histopathological examination of the axillary tumour showed an encapsulated spindle-cell mesenchymal tumour measuring 18.9 x 14.5 x 8.5 cm with cystic and haemorrhagic parts. Its weight was 873 g. Staining was positive for S100 and negative for MNF116. The proliferation rate was 3%. Therefore, it was diagnosed as a schwannoma rich in cells (Figures 4 and 5). The tumor of the thoracic wall was diagnosed as a 5.8 x 4.7 x 2.2 cm angiolipoma. Postoperative vacuum drainage of the left axilla was performed for three days, and the postoperative seroma was resorbed within a few days. No long-term complications or neurological deficits were evident at the 12-month follow up.



**Figure 4.** Macroscopic aspect of the resected schwannoma (axillary side is marked with a strand); encapsulated, cystic, and haemorrhagic tumour with a yellow/white cutting area.



**Figure 5.** Histology of the schwannoma (heamatoxylin-eosine staining in A and B): a spindle-cell mesenchymal tumour. It shows partial regressive transformations, an elongated nucleus and is rich in cells 100µm (A), 50µm (B). Immunohistochemical staining shows cytoplasmatic and nuclear expression of S100-protein (20µm) (C).

## Discussion

Schwannomas are common tumours of the PNS. While they occur in the upper extremities in 73% of cases, tumours of the axilla are relatively uncommon [7]. In most cases, axillary tumours are lymph node metastases of breast cancer or malignant melanoma [8]. However, benign or malignant tissue from accessory breast tissue also has to be considered, for example, fibroadenomas, hamartomas, and cancer. Other soft tissue masses may also be found, including lipomas, schwannomas (as seen in our patient), haemangiomas, fibromatosis, epidermoid cysts, and malignant fibrous histiocytes, as well as complications presenting as masses after axillary lymph node dissection (seromas, haematomas, suture granulomas, pseudoaneurysms, and lymphangiectasia) [9].

Imaging of the tumour is recommended for diagnosis, since this gives an idea of its size and may reveal its origin. We performed a CT scan and an ultrasound of the axilla. In this case, a cystic inhomogeneous mass was described that was not typical for schwannomas [10, 11]. Fine needle aspiration is the preferred method of clarifying the malignant potential of the tumour [8]. Immunohistochemical staining was positive for S100 protein and negative for MNF116, which excluded an epithelial origin of the tumour mass [12]. Thus, the axillary mass was diagnosed as a benign schwannoma.

The treatment of choice in the case of schwannoma is surgical resection of the tumour. Therefore, it is important to know if the tumour infiltrates into or

originates from structures of the axilla such as the brachial plexus, vessels, or muscles. The operating strategy should be chosen on the basis of the above information. Postsurgical complications may include neurological dysfunction caused by effects on the brachial plexus during surgery, or by the formation of haematoma or seroma. No long-term mortality has been reported.

Surgery is indicated for tumours causing neurological dysfunction or pain, or for any rapidly growing tumours with a suspicion of malignancy; typically, complete resection of such tumours results in cure.

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## Key Points:

- Schwannomas are common tumours of the peripheral nervous system.
- Symptoms are caused by the suppressing growth of the tumours and involve pain, weakness of the limb or paraesthesia.
- Schwannomas are diagnosed radiologically by CT and MRI scanning. To confirm the diagnosis histologically a fine needle aspiration maybe carried out.
- The treatment of choice is the surgical resection of the tumour.