“Huge Axillary Mass - Neurofibroma Brachial Plexus”

Dharmendra Mehta · D. D. Mehta · M. B. Shaam ·
J. K. Yadav

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Abstract Axillary swelling arising from soft tissue is not uncommon. Lipoma, Lymphadenopathy due to Kochs or Lymphoma are commonest swellings seen but firm to hard non tender mass arising from maninges of Brachial plexus is not so common. Usually these masses are benign but one may come across malignant tumour. Twenty-three year male presented with mass in anterior chest wall & arm pit having no other specific complaints, was diagnosed as Spindle cell tumour on FNAC & excision biopsy turned out to be Neurofibroma of Brachial plexus.

Keywords Brachial plexus · Axilla · Axillary artery · Neurofibroma · Thorax

Introduction

Axillary masses are frequently reported in surgical practice and pediatrics. Lipoma, lymphadenopathy due to Koch's infection, and lymphoma are reported quite

commonly, but firm to hard nontender, big size mass in axilla, which is not freely mobile, is an uncommon situation. Neurofibromas have been reported to arise almost everywhere in body, but neurofibroma arising from the brachial plexus is very uncommon.

Case Report

A 23-year-old male presented with a mass in the right ARMPIT and anterior part of chest wall, noticed about 6 months ago, increasing in size, but neither painful nor having any pressure effect or complaints of any neurological deficit over the right upper limb (Fig. 1a). All the routine blood tests were normal. The X-ray of the chest was essentially normal except for a shadow in the upper part on the right side. Ultrasonography of the mass showed a heteroechoic lesion measuring $9.2 \times 5.4 \times 4.7$ cm at the right shoulder and axilla ? neoplastic. FNAC of the mass reported it to be a spindle cell tumor. He was subjected to CT scan of the thorax region, which was also suggestive of neoplastic origin not fixed to bones or pectoralis muscles (Fig. 1b, c). The patient was explained the due risk of neurological deficit after the surgery and, after obtaining the proper informed written consent, axilla was explored. The mass was very big, free from pectoralis muscles and shoulder bones (Fig. 1d), but it was engulfing axillary vessels and was arising from the brachial plexus (Fig. 2a). The mass was gradually dissected off the axillary vessels and shaved off from the brachial plexus (Fig. 2b). A drain was placed. Histopathology revealed a mass weighing 252 g and $9.5 \times 9 \times 5$ cm in size with other tissue measuring $10 \times 4.5 \times 2.5$ cm mass with multiple lymph nodes; showing features of neurofibroma with chronic nonspecific lymphadenitis (Fig. 2c).

D. Mehta (✉) · D. D. Mehta · J. K. Yadav
Department of Surgery, Shri Aurobindo
Institute of Medical Sciences,
Indore, India
e-mail: dymehta@gmail.com

D. Mehta
e-mail: dymehta@yahoo.co.uk

D. Mehta
e-mail: saims_@rediffmail.com

M. B. Shaam
M.G.M. Medical College,
Indore, India

Fig. 1 Location of axillary mass

Discussion

The brachial plexus tumors are usually benign. Usual presentation of signs and symptoms include palpable mass (60%), numbness/paresthesias (44%), radiating pain (44%), local pain (16%), and weakness (12%). Age varies from 19 to 71 years, whereas duration of symptoms ranges from 2 months to 10 years, and lesions range widely in size [1]. A thorough history and examination is essential in patients with brachial plexus tumors because they have very few presenting symptoms and signs, and if present, can be subtle. Motor deficits are usually a late feature in the pathogenesis of this lesion, and a progressive course of pain and significant sensory and motor deficits suggests a malignant process. A detailed family history may reveal familial syndromes and neurocutaneous disorders that predispose the patient to neoplasia, such as neurofibromatosis. The mass should also be examined for consistency and mobility. An irregular, firm, and immobile mass suggests malignancy [2]. The patient in the present study hardly had any symptoms other than a mass in axilla and anterior chest with some local pain.

Neurofibromatosis type 1 is an autosomal-dominant disorder affecting approximately 1 in 3,500 births. It is characterized by café-au-lait spots, neurofibromas, axillary

or inguinal freckling, and skeletal and neurologic signs. Fifty percent of the neurofibromatosis type 1 patients represent a new mutation [3]. Tumors of the brachial plexus according are included to soft-tissue tumors. Because of the rare occurrence of these tumors, diagnostic and operative experience is relatively limited. There are few publications on the tumors of the brachial plexus [4]. The majority of the tumors were reported as benign peripheral nerve sheath tumors from the brachial plexus region. Neurofibromas were more prevalent in the upper extremities [5]. In a series of 40 neural sheath tumors Lusk et al. [6] found 26 neurofibromas, nine of which were associated with von Recklinghausen's disease (VRD). Benign neurogenic tumors are well characterized by preoperative MRI, appearing as well-defined, oval soft-tissue masses, which are typically isointense on T1-weighted images and show the "target sign" on T2-weighted images. Differentiation between schwannoma and neurofibroma can often be made by assessing the relation of the lesion to the nerve of origin [7]. In this patient, CT scans showed that the neck, thorax and axilla were affected. Proper radio imaging is a must for diagnosis and assessment of the extent of lesion [7, 8]. Management of benign tumor is surgical excision. Solitary neurofibromas could often be totally resected without

Fig. 2 Tumour cleared off axillary vessels and HPE slide

added deficit by sacrificing fascicles entering and leaving the tumor that were determined to be “non-functional” by intraoperative nerve action potential recordings. Resection of neurofibromas associated with von Recklinghausen’s disease sometimes results in significant loss. Operation is nonetheless recommended, especially when malignancy is suspected because of rapidly increasing size, when severe pain or neural deficit is present, or when compression of adjacent plexus elements is a concern. Forequarter amputation is advised for malignant intrinsic tumors involving distal plexus elements even though gross total resection seems feasible [6]. This patient also had quite big mass weighing 250 g, $>9 \times 9 \times 5$ cm, extending from axilla, anterior thorax to the root of the neck. Some of the malignant tumors could be controlled by surgery plus adjuvant therapy, but this category is still associated with high morbidity and mortality rates [9]. Intraoperative electrophysiological neuromonitoring is used to demonstrate the proper management of a brachial plexus nerve sheath tumor excision [10]. Despite aggressive limb ablation or limb sparing surgery plus adjunctive therapy, malignant peripheral nerve sheath tumors continues to be associated with high morbidity and mortality rates [5].

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