Archives of Medicine©
15 (06) 2023 : 001-005 • CASE REPORT

# Chest wall tumor - An unusual presentation

**Mehwish Aslam***
Department of Neurosurgery, Pakistan Institute of Medical Sciences, Islamabad, Pakistan

SUMMARY

The chest wall consists of soft tissues, cartilage and bones. A large part of the masses originates from soft tissue. Chest wall tumours constitute 5% of thoracic and less than 1% of all primary tumours; 40% and 60% are malignant. Tumours may originate primarily in the chest wall and metastasize to or extend into it *via* local invasion from adjacent structures. Morbidity and mortality are specific to the particular tumour type. We report a case of a 42-year-old male with complaints of a painful lump on the right chest wall, which, after surgical removal, showed spindle cell sarcoma stage 2. Primary Spindle Cell Sarcoma (SCS) is an extremely rare entity and one of the least reported tumours. It is a type of connective tissue tumour that generally begins in layers of connective tissue under the skin, between muscles and surrounding organs. Only a handful of cases have been reported around the world from a variety of body parts.

**Keywords:** Sarcoma; Chest wall tumour; Spindle cell carcinoma; Surgery

**Address for correspondence:**

Dr. Mehwish Aslam
Department of Neurosurgery, Pakistan Institute of Medical Sciences, Islamabad, Pakistan
Tel: + 92 9054627867; E-mail: drmehwishaslam@gmail.com

**Word count:** 1409 **Tables:** 00 **Figures:** 05 **References:** 06

**Received:** 01.12.2023, Manuscript No. ipaom-23-14334; **Editor assigned:** 04.12.2023, PreQC No. P-14334; **Reviewed:** 18.12.2023, QC No. Q-14334; **Revised:** 22.12.2023, Manuscript No. R-14334; **Published:** 29.12.2023

## INTRODUCTION

Neoplasms of the chest wall comprise a heterogeneous group of lesions that are challenging to diagnose and treat. Chest wall neoplasms may be either primary or metastatic, with a malignancy rate of ~50% and these can be symptomatic or asymptomatic, with ~20% found incidentally on chest radiographs [1,2]. Extra thoracic lesions are more likely to present as a growing mass **(Fig. 1)**. Pain is the most common symptom for both benign and malignant tumours. Chest radiography, Computed Tomography (CT), Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET) can all be used to assess a chest wall tumour. Chest X-ray can detect calcification, ossification or bone destruction, location and size but is limited in detail. CT can provide information about the vascularity of a tumour if contrast is used, as well as a more detailed appraisal of the mass's extent, location and composition [3]. Depending on diagnosis, staging and age, therapy has to be tailored for each patient, as discussed in a multidisciplinary team setting; however, radical resection is, in most cases, the significant component of treatment, along with the use of chemotherapy and radiotherapy if needed.

## CASE PRESENTATION

I present a 42 years old male, a driver by occupation, resident of Karachi, came to us in Emergency Department at Abbasi Shaheed Hospital Karachi, Pakistan on Sept/18/2018, with complaints of a painful lump on the right side of the chest wall for ten days (Sept/09/2018), the swelling was gradually increasing in size and was painful and warm. There was no history of trauma, weight loss, cough and shortness of breath.

His past medical and surgical history were non-significant. However, he was a smoker of about 20 packs/year but quit 20 years ago.

On examination, he was a pale-looking man lying on bed uncomfortably with vitals of:

Pulse: 90 /min.

BP: 120/70 mmHg

R/R: 16 breaths/minute

Temperature: 101 °F

A swelling was about 10 × 5 cm (longitudinal and transverse) at the mid-clavicular line starting from the fifth rib; covered by skin, fluctuating, erythematous and warm with no discharge. However, respiratory and abdominal examinations were normal.

His initial laboratory reports were:

Hb: 8.9 mg/dl

TLC: 14.6%

Platelets: 311,000

His other labs such as serum urea, creatinine, electrolytes, PT and INR were normal. However, his Anti-HCV came out positive incidentally.

Chest x-ray revealed soft tissue swelling from the 5th to 8th ribs on the right side of the chest wall, with no breaching of lungs or ribs.

In the emergency Operation Room (OR), we operated patient under the impression of an abscess and drained about 500 cc of frank blood with clots; there was a 5 cm cauliflower appearance mass adherent to the chest wall excised and skin was left open for secondary healing and specimen was sent for histopathology (which got misplaced by his attendant).

Postoperatively, 2 pints of blood were transfused and his Hb. built up to 10g/dl. He was kept on antibiotics which were ceftriaxone and pain killers. After nine days, he got discharged with the advice of daily dressings and oral antibiotics and follow-up in OPD.

On Oct/17/2018, he came again to OPD with complaints of a mass protruding from the previous area, around 7 × 7 cm, tender, with rough edges, soft in consistency, cauliflower-like appearance, foul-smelling with bleeding from edges **(Fig. 1)**. No lymph nodes were palpable.

This time he was looking pale and his vitals were:

Pulse: 88/min

BP: 110/80 mmHg

Temp: 99 °F

R/R: 15 breaths/min.

His Hb was 9.2g/dl with a TLC of 15.4% and platelets of 256,000 with normal Pt, INR, APTT, Serum Urea, Creatinine, Electrolytes and LFTs, although his ESR was 60 mm/hr.

His CT scan findings were: Soft tissue enhancing mass involving muscles and abutting adjacent ribs without evidence of bony erosions; margins of the lesion are lobulated and suggestive of the neoplastic lesion **(Fig. 2 and Fig. 3)**.

After his workup, we planned for wide margin excision, performed on the Oct/23/2018. Mass was excised till the healthy chest wall **(Fig. 4)**, hemostasis secured and the cavity was washed with hydrogen peroxide and normal saline. Chest wall muscles were approximated, skin closed with prolene in mattress fashion **(Fig. 5)** and the specimen was sent for histopathology. We gave him injection ceftriaxone and gentamicin post-operatively.

On the 10th postoperative day, he developed erythematous swelling around the incision, which was fluctuant; on needle aspiration, around 50 cc serosanguinous fluid was drained, which was sent for culture and sensitivity, which depicted the wound was sensitive with colistin and vancomycin. On Nov/04/2018, we started vancomycin 1gm along with the advice of high protein diet.

His histopathology report showed Spindle Cell Sarcoma. However, the margins showed healthy tissue. Therefore, we referred the patient to Jinnah Postgraduate Medical Center Karachi, Pakistan, for an oncologist's opinion, where his bone scan showed no bony metastasis.

## RESULTS AND DISCUSSION

As stated previously, more than 50% of chest wall neoplasms are malignant and most of these malignancies represent direct invasion from adjacent lung, breast, pleura and mediastinal tumours. The most common primary malignancies of the chest wall are sarcomas. At presentation, older patients tend to have large, aggressive, malignant chest wall neoplasms, whereas younger patients tend to have small, benign abnormalities [3]. Approximately 20% of chest wall tumours may be detected initially at chest radiography. A plain chest X-ray can make the diagnosis. However, Computed Tomography (CT) or Magnetic Resonance (MR) imaging best detects the carcinoma. Ultrasonography has a limited role in detection as it can be

**Fig. 1.** Chest wall carcinoma.

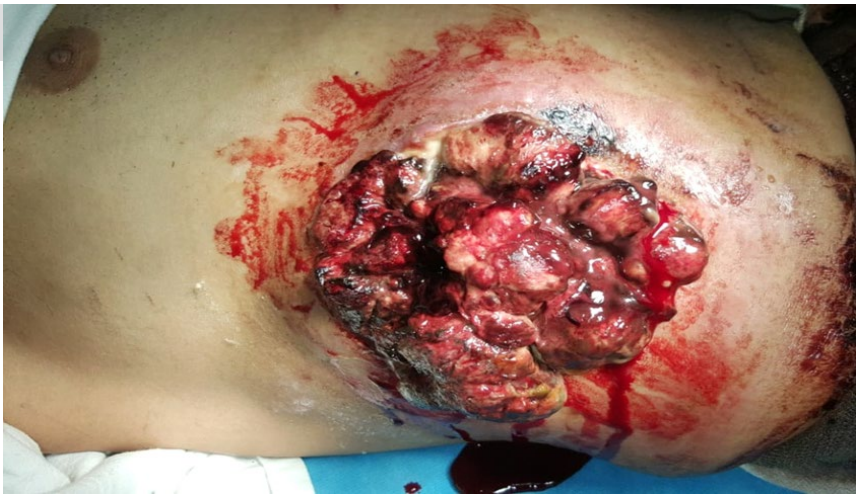


**Fig. 2.** CT chest.

**Fig. 3.** CT chest.

**Fig. 4.** Post wide margin surgical resection.

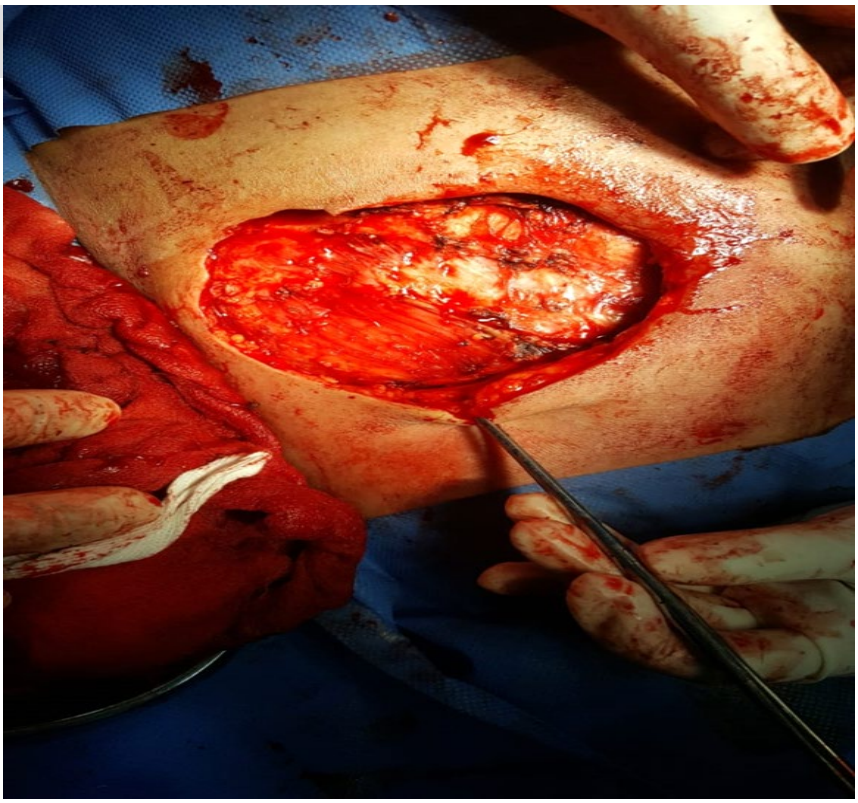
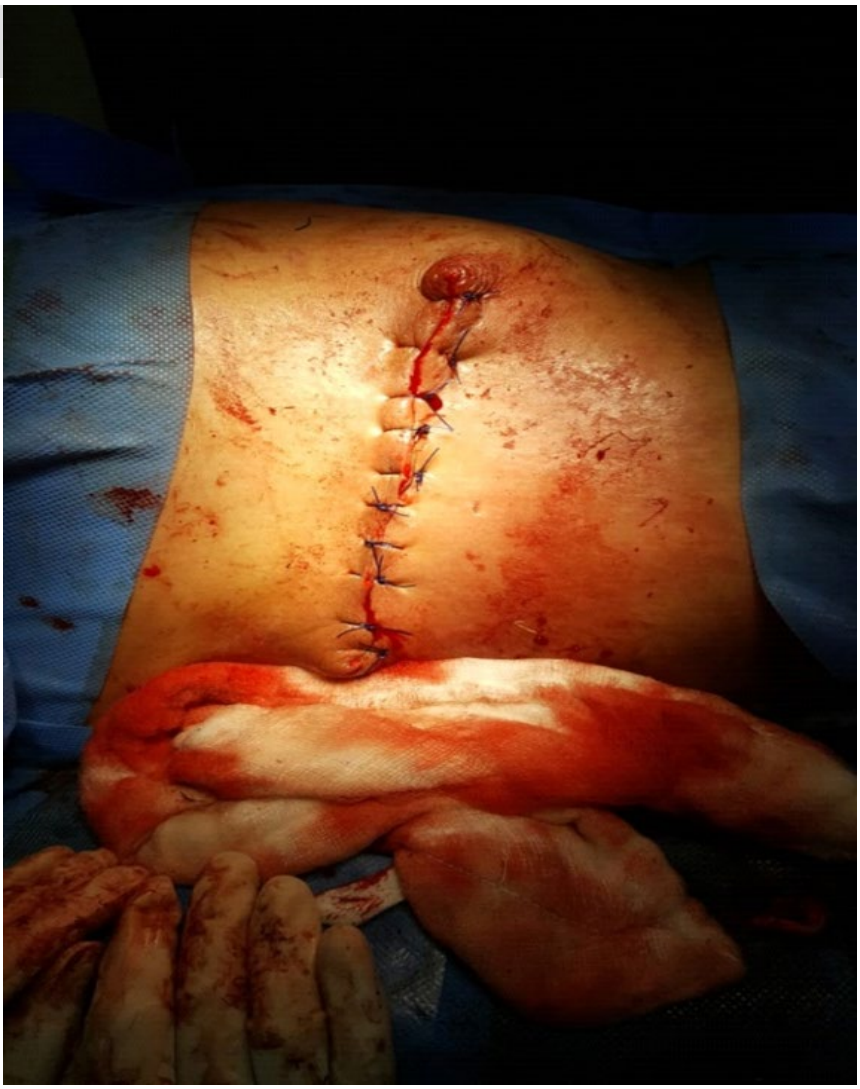


**Fig. 5.** Secondary healing with prolene.



used to take a biopsy. A PET scan helps plan the course of the definitive treatment [4]. Treatment depends on staging; Stage I soft tissue sarcomas are low-grade tumours of any size. Small (less than 5 cm or about 2 inches across) tumours of the arms or legs can be treated with surgery alone. Most stage II and III sarcomas are high-grade tumours. They tend to grow and spread quickly. Some stage III tumours have already spread to nearby lymph nodes; therefore, surgically removing the tumour is the primary treatment. Lymph nodes will also be removed if they contain cancer cells. Radiation may be given after surgery as the local recurrence rate is high. A sarcoma is considered stage IV when it has spread to distant sites (M1). Stage IV sarcomas are rarely curable; chemotherapy and radiotherapy are used to relieve symptoms [5]. A retrospective study at the University of Washington Medical Center has shown that as compared with surgery alone, disease-free survival at both 5 and 10 years improved by 92% with the addition of radiation therapy to surgery. It is increased by 82% with the addition of chemotherapy to surgery and by 89% and 90% with the addition of both chemotherapy and radiation therapy at 5 and 10 years, respectively [6].

## CONCLUSION

Chest wall tumors are rare and present as a clinical challenge for surgeons. In addition to rarity, symptoms are usually non-specific as this patient presented with fluctuant, erythematous, rapidly growing swelling. This case report highlights the importance of prompt using of accurate radiological testing (e.g., CT) in making an accurate diagnosis in patients with significant chest wall swelling and pain. After diagnosing a patient with a tumor on the chest wall, the patient's case should be discussed by a multidisciplinary group including surgeons, pathologists, radiologists, radiotherapists, medical oncologist and plastic surgeons, to plan optimal treatment and reconstructive possibilities.

## ACKNOWLEDGMENT

None.

## CONFLICT OF INTEREST

None.

REFERENCES

1. **Harati K, Kolbenschlag J, Bohm J, et al.** Long-term outcomes of patients with soft tissue sarcoma of the chest wall: Analysis of the prognostic significance of microscopic margins. *Oncol Lett*. 2018;15(2):2179-2187.
2. **D'addario G, Früh M, Reck M, et al.** Metastatic non-small-cell lung cancer: ESMO clinical practice guidelines for diagnosis, treatment and follow-up. *Ann Oncol*. 2010;21:v116-v119.
3. **David EA, Marshall MB**. Review of chest wall tumors: A diagnostic, therapeutic and reconstructive challenge. *Semin Plast Surg* 2011;25:016-024.
4. **Carter BW, Benveniste MF, Betancourt SL, et al.** Imaging evaluation of malignant chest wall neoplasms. *Radiographics*. 2016;36(5):1285-1306.
5. https://www.cancer.gov/types/soft-tissue-sarcoma/patient/adult-soft-tissue-treatment-pdq
6. **Burt A, Berriochoa J, Korpak A, et al.** Treatment of chest wall sarcomas: A single-institution experience over 20 years. *Am J Clin Oncol*. 2015;38(1):80-86.