

Complicated Intramuscular Tuberculous Cold Abscess

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Abstract

24 years old male, previously healthy, presented with a 6 months history of fever, back pain, left sided upper back swelling and weight loss. US soft tissue of the back showed superficial intramuscular large collection of asymmetric thick wall showing complex content. CT thorax showed right upper loculated pleural collection with enhancing wall extending to the soft tissue of right upper lateral chest wall associated with bony destruction and a left large intramuscular collection involving the left para spinal muscles with mild extension to the right side, and there is a tiny bone fragments in the posterior lower part of the collection communicating with the left paraspinal/prevertebral collection. Fine needle aspiration of the fluid was sent for analysis, was positive for TB AFB Smear and PCR. Patient was started on Anti-TB and referred for thoracic surgeon to be followed in outpatient clinic.

Keywords: Cold abscess; Inflammation; Tuberculosis; Subcutaneous semaglutide

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Introduction

Cold abscess refers to an abscess that lacks the intense inflammation usually associated with infection. This may be associated with infections due to bacteria like Tuberculosis [1] and fungi like Blastomycosis [2] that do not tend to stimulate acute inflammation. Mycobacterium tuberculosis causes Tuberculosis (TB) and is a leading infectious cause of death in adults worldwide [3]. Musculoskeletal tuberculosis is relatively uncommon and accounts for about 1 to 2% of all the tuberculosis patients [4,5] and accounts for about 10% of all extra-pulmonary TB infections. Tuberculosis of the chest wall constitutes 1 to 5% of all cases of musculoskeletal TB [6,7]. Cold abscess arising from soft tissue is more uncommon. Here we present a case of a young previously healthy male presenting with constitutional symptoms and left upper back swelling turning out to be tuberculosis.

Case Presentation

24 years old male, presented with 6 months history of fever, back pain and left sided back swelling. The fever was on and off throughout the day and was associated with night sweats. He was also complaining of progressive left sided back swelling, initially was small in size, increasing over the months, was painless but started to be slightly painful over the last few days prior to presentation. No history of trauma. He had no swelling elsewhere. Had significant weight loss of 12 kg over the past 6

months. His father had Pulmonary TB. He works as a scaffolder. He is not smoker, no alcohol use.

On examination, he had fever documented as 38.5, other vitals were unremarkable, his chest examination was clear with good breath sounds bilaterally and normal vesicular breathing. Back Examination revealed a swelling on the left scapular region about 10 × 4 cm, no skin changes, redness or sinus drainage; it was soft, fluctuating with Mild tenderness (**Figure 1**). There was no other visible or palpable swelling. Remaining of the examination was unremarkable (**Figure 2 and Table 1**).

US Soft tissue thoracic region of back was done which demonstrated superficial intramuscular large collection of asymmetric thick wall showing complex content (with internal echoes) is noted at the site of complaint in the posterior chest wall left to midline (**Figures 3 and 4**).

CT Thorax with contrast was done which demonstrated right upper loculated pleural collection with enhancing wall extending to the soft tissue of right upper lateral chest wall associated with bony destruction anterior part of right second rib measuring 5.8 × 3.6 × 6 cm (CC × AP × W) (**Figure 5**). There is a large intramuscular collection involving the left para spinal muscles with mild extension to the right side, and there is a tiny bone fragments in the posterior lower part of the collection, the collection measures



Figure 1 Left scapular swelling.

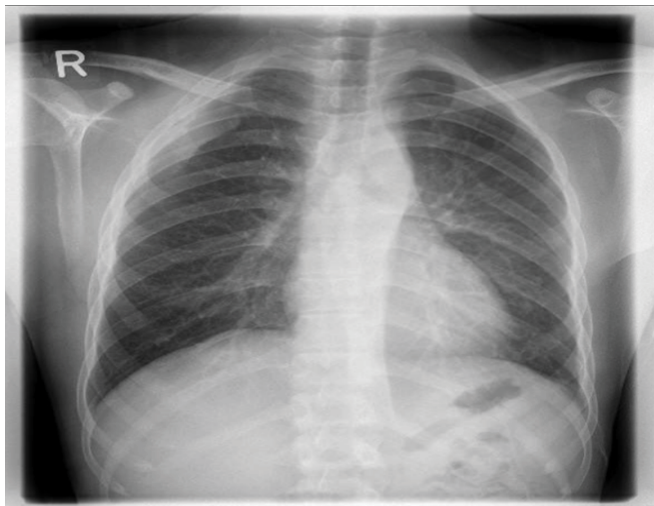


Figure 2 Unremarkable Chest XR.

14 × 2.2 × 8 cm (CC × AP × W) , it communicate with the left paraspinal/prevertebral collection at the level of T6,measuring 14 × 2 × 3.4 cm , the paraspinal collection extending from (T4-T9 level) associated with bone destruction of the posterior part of left sixth rib and extending through the left exit neural foramina of T6 abutting the Dural sac (**Figure 6**). There is no focal parenchymal lesion. Mediastinal vessels are normal. There are multiple mediastinal lymph nodes also measuring 11 mm in the upper right paratracheal region.

Fine needle aspiration was done for the back swelling (**Figure 7**) which revealed thick creamy fluid. The fluid was sent for work up including Tuberculosis Acid Fast Bacilli Smear and PCR which turned as positive for Tuberculosis. Gram stain and culture were negative. The patient was treated as a case of intramuscular tuberculous cold abscess and was started on anti-TB medication along with pyridoxine. Thoracic surgery team was consulted, they

Table 1 Results of lab examination.

Detail	Value w/units	Flags	Normal Range
Calcium	2.20 mmol/L	NA	-
Adjusted Calcium	2.34 mmol/L	NA	2.20-2.60
Albumin Lvl	33 gm/L	Low	35-50
WBC	8.9 × 10 ³ /uL	NA	4.0-10.0
RBC	4.4 × 10 ⁶ /uL	Low	4.5-5.5
Hgb	9.6 gm/dL	Low	13.0-17.0
Hct	30.2%	Low	40.0-50.0
MCV	67.9 fL	Low	83.0-101.0
MCH	21.5 pg	Low	27.0-32.0
MCHC	31.7 gm/dL	NA	31.5-34.5
RDW-CV	15.6%	High	11.6-14.5
Iron	2.06 umol/L	Low	11.60-31.30
TIBC	49 umol/L	NA	45-80
Transferrin	1.94 gm/L	Low	2.00-3.60
Fe% Saturation	4%	Low	15-45
Ferritin	193.2 mcg/L	NA	24.0-336.0
Vit B12	103 pmol/L	Low	133-675
Urea	2.8 mmol/L	NA	2.5-7.8
Creatinine	69 umol/L	NA	64-110
Sodium	133 mmol/L	NA	133-146
Potassium	3.9 mmol/L	NA	3.5-5.3
Chloride	101.4 mmol/L	NA	95.0-108.0
Bicarbonate	25.5 mmol/L	NA	22.0-29.0
Bilirubin T	12.7 umol/L	NA	3.4-20.5
Total Protein	76 gm/L	NA	60-80
CRP	111 mg/L	High	0-5
Procalcitonin	0.15 ng/mL	NA	-

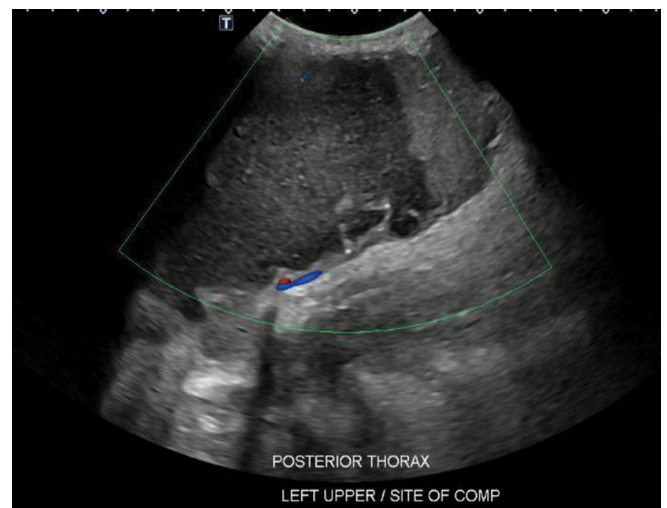


Figure 3 Intramuscular collections showing asymmetric thick wall.

opted for medical treatment and will follow in their clinic. The patient was discharged in good condition with appropriate follow up and medications given.



Figure 4 Intramuscular collection.

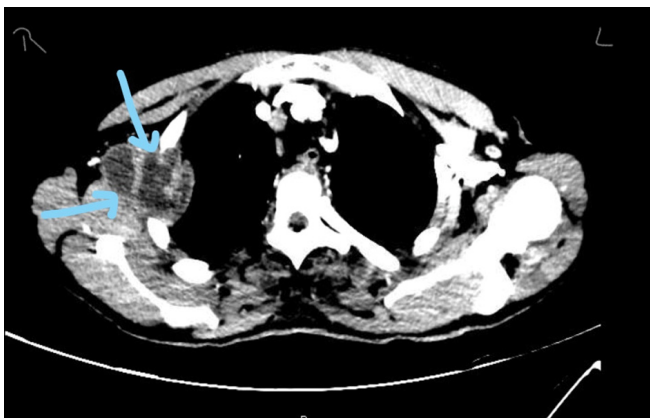


Figure 5 CT Thorax of right pleural collection.

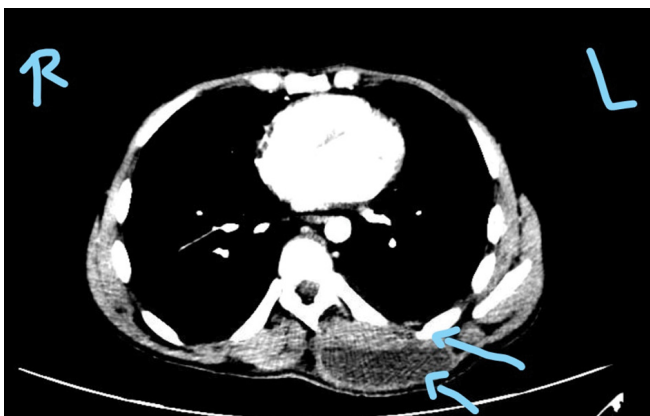


Figure 6 Left intramuscular collection.



Figure 7 Swelling aspirate.

Discussion

Tuberculosis is a common endemic disease mainly leading to pulmonary disease. Musculoskeletal tuberculosis is relatively uncommon and accounts for 1 to 2% of all the tuberculosis patients [4,5] and accounts for about 10% of all extra pulmonary TB infections. Tuberculosis of the chest wall constitutes 1 to 5% of all cases of musculoskeletal TB [6,7]. In this case, we report a patient with progressive upper back lump, further work up revealed, intramuscular collection with extension to the paraspinal muscle and underlying bone involvement. CT showed another collection arising from the right upper pleura and extending to the right upper soft tissue with underlying bone destruction but no lung involvement. Intramuscular tuberculous cold abscess is a rare presentation of tuberculosis with very few cases reported. One case was reported where a patient developed deltoid muscle cold abscess and was diagnosed with TB due to possible reactivation of BCG vaccine [8]. Another case series reports 5 children developing intramuscular TB after intramuscular injection [9]. Another case reported an 8-year-old child developing multiple muscular swelling, biopsy from these sites demonstrated caseous necrosis consistent with TB [10].

Conclusion

Intramuscular cold abscess due to tuberculosis is an uncommon manifestation of tuberculosis and should be considered as a differential diagnosis especially in patient from endemic countries.

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