

TB or not TB? The axillary lump question

An 81-year-old woman of healthy weight presented with a 2-week history of a painless right axillary lump. Physical examination revealed a 2cm firm nodule with a central keratinous plug in the right axilla (Fig. 1). The surrounding skin was pigmented, non-tender and indurated. Sonography of the nodule demonstrated an underlying ill-defined cystic collection containing mobile echoes with surrounding skin thickening (Fig. 2). There were a few other small right axillary lymph nodes with prominent cortices in the vicinity (not shown). The patient was otherwise well and asymptomatic. Breast clinical examination, bilateral mammography and bilateral breast ultrasound were unremarkable.

What is your diagnosis?

- A. Cutaneous or nodal metastasis from primary breast malignancy
- B. Hidradenitis suppurativa
- C. Amelanotic/hypomelanotic melanoma
- D. Keratoacanthoma
- E. Tuberculous scrofuloderma

Diagnosis. An incision biopsy of the skin nodule was performed and a small amount of pus was seen on excision. Histopathological examination revealed necrotising granulomatous inflammation with the presence of *Mycobacterium tuberculosis* DNA complex. On further review, the patient had no pulmonary or systemic signs of tuberculosis (TB) and she was not immunocompromised. She was commenced on anti-TB treatment, and her recovery was uneventful.

Discussion. Scrofuloderma is a rare skin manifestation of an underlying tuberculous focus such as a lymph node, testicle, joint or bone. It forms when a cold abscess progresses to a painless skin nodule, which may break to form an undermined ulcer with discharging fistulous tracks. On healing, it tends to leave retracted and puckered skin scars. The majority of scrofuloderma is caused by *M. tuberculosis* and the rest is caused by non-tuberculous mycobacteria. The face and neck are the most common sites of manifestation.¹ However, isolated axillary scrofuloderma is rare and may not present with constitutional symptoms or associated chest infection,² thereby potentially causing diagnostic confusion. TB continues to be endemic in Singapore and occasionally, there may be uncommon skin presentations such as scrofuloderma, even in immunocompetent patients. It is therefore important



Fig. 1. The painless right axillary umbilicated skin nodule with central keratin plug.

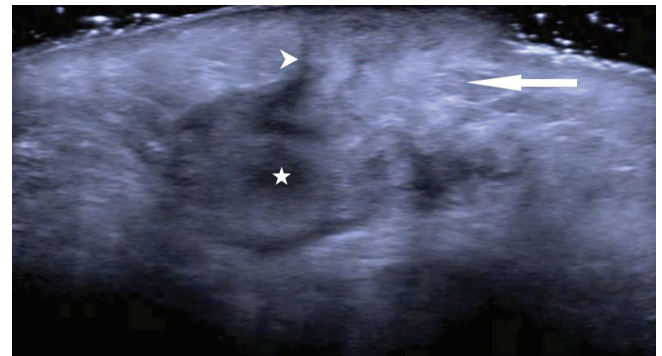


Fig. 2. Ultrasound scan over the skin nodule showing loss of skin and soft tissue planes, with echogenic thickened subcutaneous fat (arrow). An underlying 21mm ovoid cystic collection containing mobile internal echoes (star) with posterior acoustic enhancement and perilesional echogenicity is located 25mm deep from the nodule's skin surface. A thin hypoechoic track (arrowhead) communicating from the anterior aspect of the collection to the skin surface represents a sinus track, akin to a volcanic vent rising to the top. The sonographic area encompassing the inflamed, oedematous tissue is 35mm wide.

to recognise the clinical and radiological signs so that the proper diagnosis can be made for appropriate management.

The physical finding of a non-tender, raised nodule with surrounding pigmented and indurated skin suggests an underlying chronic inflammatory or infiltrative condition. Ultrasound assessment of the nodule (Fig. 2) showed echogenic thickened subcutaneous fat. There was an underlying semi-liquefied cystic collection with mobile echoes that communicated via a thin sinus tract to the skin surface. These findings are consistent with a partially liquefied immature abscess, with differentials being a discharging, caseating and/or necrotic lymph

node. Not shown in the picture were a few small, non-matted axillary lymph nodes with prominent cortices, which were likely reactive in nature.

Fig. 2 showed ultrasound details that were consistent with inflammation and/or infection with an area of liquefaction that represented an immature abscess.

In metastatic nodal disease from breast cancer or other malignancies involving the skin, it is common to observe large abnormal nodes in the axillae, which were not seen in this case. There was no clinical or radiological evidence of primary breast malignancy to support this option. Finally, it would be unusual for cutaneous and nodal metastases to present with an underlying abscess collection, as shown on the ultrasound image in this case.

Hidradenitis suppurativa (HS) is a chronic inflammatory skin condition related to underlying follicular occlusion that most commonly affects the axilla.³ It has a female predominance with typical onset in the post-pubertal age group, and presentation after menopause is rare.³ There is a strong association with smoking and obesity.^{3,4} Early HS is characterised by tender subcutaneous nodules that may rupture with foul-smelling purulent discharge.³ With recurrence, these superficial abscesses coalesce to develop deeper dermal abscesses with intercommunicating tracts.³ In the indolent phase, there is fibrosis, skin induration and cord-like keloidal scarring.³ The patient who is in her 80s, did not present with significant pain and purulent discharge—this would be atypical of HS.

Amelanotic and hypomelanotic melanomas are uncommon subtypes of melanomas that contain little to no pigment, resulting in frequent misdiagnosis of these skin-coloured or erythematous lesions. Risk factors include increasing age and cumulative sun exposure.⁵ The ABCD criteria (asymmetry, border irregularity, colour variegation, diameter >6mm) and 3 Rs (red, raised [i.e. papule], recent change) aid recognition and diagnosis of such melanomas.⁵ While difficult to disregard melanoma based solely on the lesion's appearance, in this case, its 2-week history in a non-sun-exposed region would be highly atypical for a melanoma.

Keratoacanthoma is a rapidly growing, locally destructive skin tumour that can be difficult to distinguish from well-differentiated squamous cell carcinomas clinically. Hence, the general recommendation is to surgically excise it.⁶ The typical keratoacanthoma is a solitary nodule with sharply demarcated and skin-coloured or erythematous borders, and a classic keratotic centre, giving rise to a crateriform architecture.⁶ They usually occur on sun-exposed skin of the face or

upper limbs, and may grow up to 1–2cm within a few weeks.⁶ The clinical features of the lesion in our patient showed a central umbilication with keratinisation and in addition to its short clinical history, typified that of a keratoacanthoma. However, its axillary location and sonographic appearance that showed an underlying abscess was not characteristic of keratoacanthoma.

Another possible differential is mycosis fungoides, the most common type of cutaneous T-cell lymphoma, which presents with polymorphic patches, plaques and focal tumours.⁷ Such tumours may ulcerate and become necrotic.⁷ They have an insidious onset and typically occur on non-sun-exposed regions.⁷ However, the patient's history of acute onset of a raised skin nodule was not in keeping with the usual presentation of mycosis fungoides.

Conclusion. TB scrofuloderma should be considered in a painless, indurated axillary skin nodule with the sonographic finding of an underlying abscess collection, even in an immunocompetent patient. The diagnosis of extrapulmonary TB must be considered and the appropriate microbiological tests should be performed for confirmation.

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