The Role of Ultrasound in a Diagnostically Challenging Case of Tuberculosis Cervical Lymphadenitis
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Tuberculosis is a notifiable disease in Ireland as it poses a significant public health risk. Of the 241 cases of tuberculosis reported in quarter 3 (1st January – 30th September) in Ireland in 2017, some of which can be recognised on ultrasound imaging and can help in establishing a strong index of suspicion for the diagnosis of TCL. Diagnosis can only be confirmed by obtaining microscopic or pathological proof through FNA or core biopsy. Given the prolonged and insidious nature of the presentation on imaging also made the diagnosis difficult as there were no additional features to characterise the lesion. Classic TCL ultrasound appearances are much more evident at Stage IV when the lesion takes on the Collar Stud appearance (Fig. 2) that showed a midline soft tissue swelling, likely inflammatory in nature with no evidence of cervical lymphadenopathy and no features suspicious for malignancy. An OPD appointment was scheduled for neck ultrasound to further characterise the swelling.

INTRODUCTION

Tuberculosis is a notifiable disease in Ireland as it poses a significant public health risk. Of the 241 cases of tuberculosis reported in quarter 3 (1st January – 30th September) in Ireland in 2017, some of which can be recognised on ultrasound imaging and can help in establishing a strong index of suspicion for the diagnosis of TCL. Diagnosis can only be confirmed by obtaining microscopic or pathological proof through FNA or core biopsy. Given the prolonged and insidious nature of the presentation on imaging also made the diagnosis difficult as there were no additional features to characterise the lesion. Classic TCL ultrasound appearances are much more evident at Stage IV when the lesion takes on the Collar Stud appearance (Fig. 2) that showed a midline soft tissue swelling, likely inflammatory in nature with no evidence of cervical lymphadenopathy and no features suspicious for malignancy. An OPD appointment was scheduled for neck ultrasound to further characterise the swelling.

INITIAL ULTRASOUND EXAMINATION

The initial ultrasound examination identified a mixed echogenicity, predominantly hypoechoic lesion (Fig. 2) in the region of interest, with a small number of hyperechoic foci within that were thought might represent air. The lesion was avascular. There was no cervical lymphadenopathy. A pharyngeal pouch could not be ruled out and a contrast enhanced soft tissue neck CT was recommended. The CECT performed 4 weeks after the ultrasound was normal, the lesion was not visible and there was no lymphadenopathy.

RECURRENT

Ten weeks after discharge from the ENT OPD the patient represented through the Emergency Department (ED) with recurrent and increased swelling at the same site. The lump was fluctuant and non tender on palpation. There was no skin erythema. The patient was otherwise well. A repeat CT was performed (Fig. 3) that showed a midline soft tissue swelling, likely inflammatory in nature with no evidence of cervical lymphadenopathy and no features suspicious for malignancy. An OPD appointment was scheduled for neck ultrasound to further characterise the swelling.

2nd ULTRASOUND EXAMINATION

The 2nd US was performed 10 days after the CECT. There was a very superficial cystic lesion with a well defined wall that demonstrated vascularity on colour Doppler (Fig. 4). There was posterior enhancement and multiple echogenic foci within (Fig. 5). The contents appeared thickened and murky. There was no evidence of cervical lymphadenopathy and the thyroid and other glands within the neck appeared normal. The cystic lesion extended above and separate from the isthmus of the thyroid and dipped between the strap muscles inferiorly anterior to the trachea. The classic appearance of a ‘Collar Stud’ cold abscess was evident demonstrating a hypoechoic tract formed as the collection migrated from the deep fascia to superficial subcutaneous region (Fig. 6).

DISCUSSION

All the ultrasounds were performed using a linear 5-7MHz high frequency transducer. Both B-mode and colour Doppler was used to characterise the lesion. Classic TCL ultrasound appearances are much more evident at Stage IV when the lesion takes on the Collar Stud appearance as it migrates to the surface. The bright echogenic foci within caused by hialynosisis in caseous necrosis are highly specific for TCL but are only evident in the later stages (Chou et al., 2014). This patient was otherwise asymptomatic and had no factors for TB other than country of origin on initial presentation. The unilocular nature of the presentation on imaging also made diagnosis difficult as there were no additional features identified that might have increased the index of suspicion for TB. The 2nd ultrasound examination yielded considerably more information for characterisation of the lesion than the CECT and with the pathology results from the US guided core biopsy facilitated diagnosis and commencement of appropriate treatment. Prompt diagnosis of TCL is important to minimise the risk of TB transmission but it is not always straightforward. Awareness of the ultrasonographic features of the various stages of the disease process can help aid detection.

REFERENCES