

## MSK Ultrasound Clinical Case Study

# Schwannoma of the hand

**Craig Winnett**  
**Sonographer**  
**I-MED Radiology Network**  
**Queensland, Australia**

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### Introduction

Benign tumours of Schwann cell origin and are the most common tumour of peripheral nerves, including cranial nerves. Schwannoma's are benign encapsulated tumours of Schwann cells. Schwann cells are on the outer layer of the nerve that provides protection and support for the nerve.

They are mostly solitary (90%) and sporadic, and rarely turn malignant. Multiple Schwannoma's can be present if associated with a genetic disorder- such as Neurofibromatosis 2 (NF2), Schwannomatosis, or Carney complex.

Symptoms are due to local mass effect or dysfunction of the nerve they arise from and include a painless or painful lump, muscle weakness, tingling, numbness, hearing problems, and/or facial paralysis.

These types of tumour can affect any peripheral nerve including cranial nerves and the most common sites of peripheral nerve are ulnar, peroneal and digital nerves.

Sonographic appearance of Schwannoma

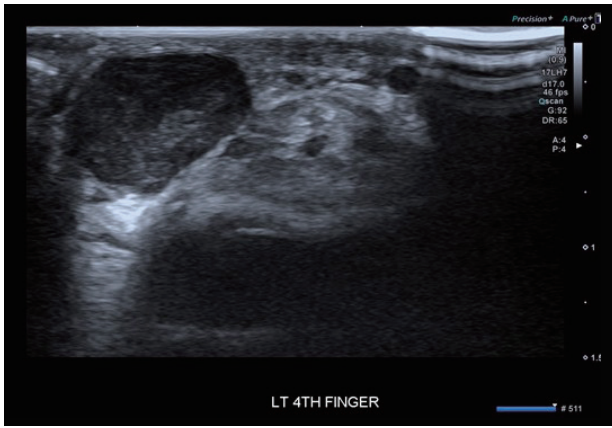
- Pseudocystic appearance
- Round, hypoechoic, solid, well circumscribed mass, posterior enhancement
- Displacing but not invading surrounding tissue
- +/- internal vascularity
- Lying continuous or adjacent to nerve border
- Larger Schwannoma may present with more heterogenous appearance, due to cystic or fatty degeneration, calcification, haemorrhage or fibrosis changes. Calcification is rare

### Differentials

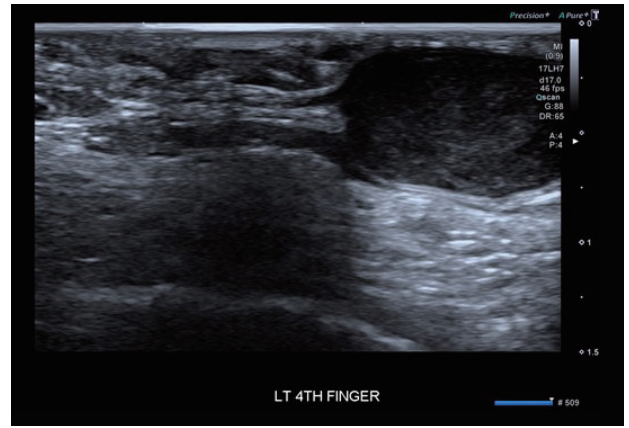
- Neurofibroma- no way to differentiate from Schwannoma via clinical presentation or ultrasound appearance. Arise centrally within nerve
- Complex ganglion (more common and difficult to differentiate from nerve if small and avascular lesion- look at relationship to neurovascular bundle)
- Giant cell tumour of tendon sheath (Closely related to tendon)
- Vascular malformation (hand-uncommon site)

### Case study

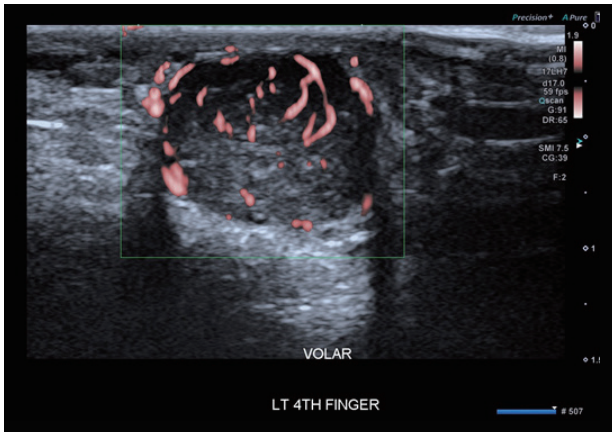
A 40-year-old male presents to clinic with a relatively painless lump on his 4th finger. Lump has been present for 10 years, and causes minimal discomfort on pressure. No numbness or tingling is present.



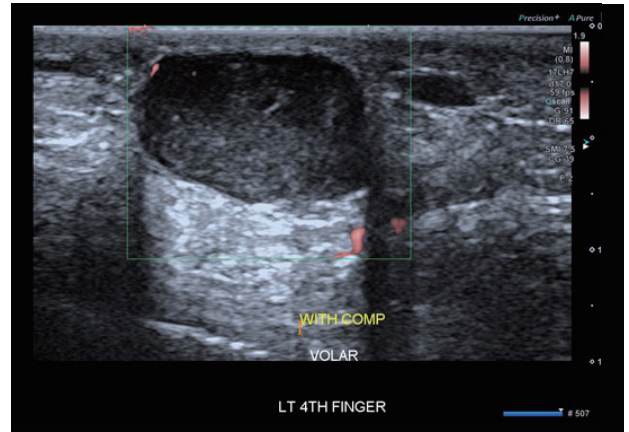
**Figure 1** Transverse view- mass adjacent to neurovascular bundle.



**Figure 2** Mass in close proximity to nerve.



**Figure 3** Very light probe pressure, increased vascularity seen within. This is a very important feature- excluding a ganglion and confirming this entity is solid.



**Figure 4** With light probe pressure, all vascularity is compressed and not seen. Careful scanning is required to get all correct information.

#### References:

1. <https://radiopaedia.org/articles/schwannoma>
2. <https://rarediseases.info.nih.gov/diseases/4767/schwannoma>

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