CANON MEDICAL

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Ultrasound Clinical Case Study

# Schwannoma of the anterior cutaneous nerve



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Panorama Radiology Specialists offers a variety of minimally-invasive imaging-guided pain management therapies for moderate to severe OA, including intra-articular cortisone, platelet rich plasma and hyaluronic acid injections, and genicular nerve radiofrequency (RF) neurotomy.

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## Case Study

A 34-year-old patient was referred for an ultrasound to investigate a palpable lump in her right anterior proximal thigh/groin crease with associated "shooting" anterior thigh pain.

An ultrasound was performed on a Canon Medical Aplio i700 Prism Edition with an i18LX5 matrix transducer. iBeam+ technology provides excellent resolution with extraordinarily high frame rates to capture the detail required for imaging the minute nerves in the area.

The deeper parenchyma was well interrogated to exclude deeper extension of the lesion. At the region of interest, a distinct 10 x 3 x 13 mm superficially located focal hypoechoic fusiform structure was identified using the i18LX5 transducer. This proved to be a superficial branch of the anterior cutaneous nerve. The tapering of the nerve at the proximal and distal ends were clearly visualised allowing confident exclusion of several differential diagnoses.




**Figure 1:** Right anterior thigh region of interest. Sagittal.

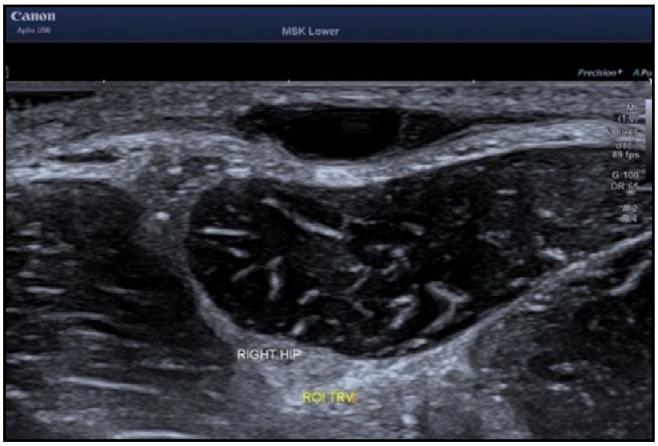



**Figure 2:** Right anterior thigh region of interest. Transverse.

Advanced Dynamic Flow (ADF) with the velocity scale set to 3.9cm/s allowed confident exclusion of vascularity, aiding in the confident diagnosis of a schwannoma.

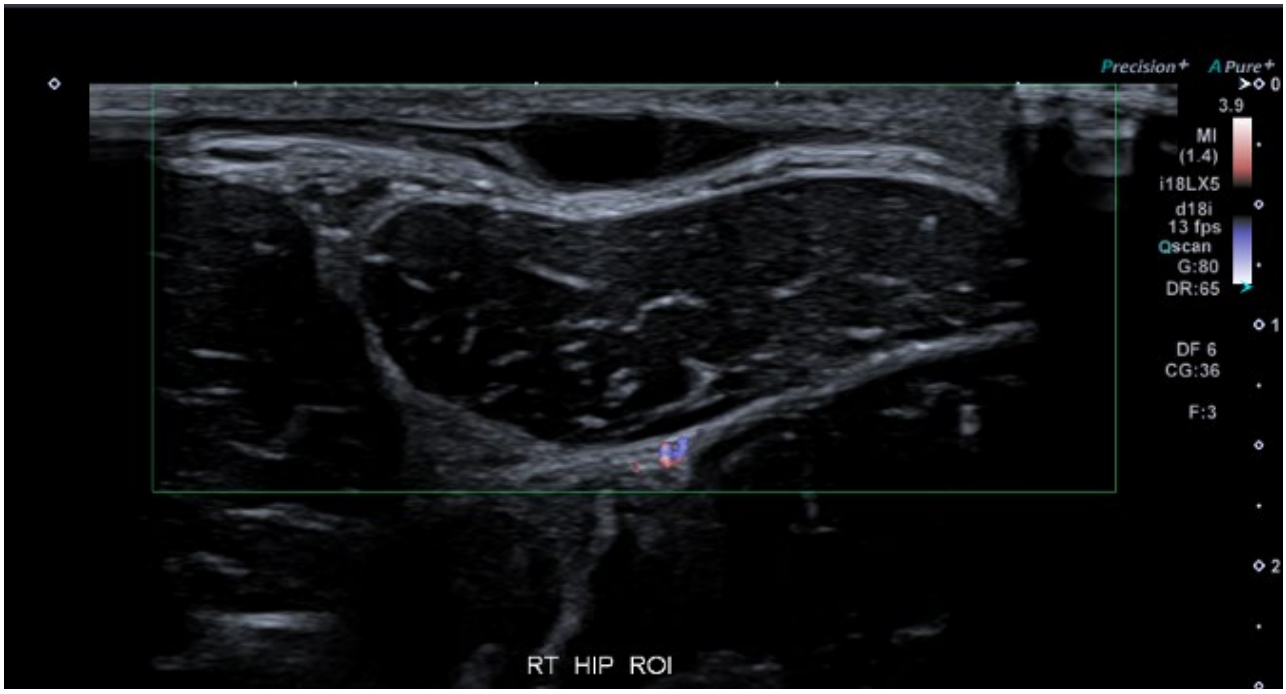



**Figure 3:** ADF was activated to exclude vascularity in the structure.

Periodical monitoring of the tumour or surgical removal are the most recommended treatment depending on the site and size of these tumours. It should be considered that these are rarely malignant and may at times require further testing prior to treatment.

## Discussion

iBeam+ technology on the Aplio i700 Prism system receives and processes ultrasound signals with greater speed to produce sharper images with increased contrast and spatial resolution. This enables the smallest of nerves and their outer fascial covering to be accurately visualised.

In this case, an alternative differential diagnosis of suspected sebaceous cyst and superficial thrombophlebitis were able to be confidently excluded. This patient was provided an accurate diagnosis for appropriate treatment which expedited a return to her regular exercise routine. This distinct diagnosis prevented the patient undergoing any further excision or biopsy of this lesion.

Excluding vascularity in this lesion was key in the diagnosis and treatment of the schwannoma. ADF is highly sensitive to areas of increased vascularity with high frame rates. The combination of Prism iBeam+ architecture and improved performance of ADF ensured confident exclusion of vascularity in the structure.

iBeam+

iBeam+ is the next level of ultra-fast and precise beam shaping, enhancing image depth and detail with clear, sharp, and distinct images.

Aplio's iBeam+ beamformer technology enables up to 4 times faster* image processing in real time to provide sharper images with better penetration and thus optimal, more robust results for higher clinical confidence.

*compared to the previous versions of Aplio i-series

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