High-Resolution Ultrasound (HRUS) as a diagnostic and planning toole in surgical management of rare chronic neurogenous pain syndromes

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Introduction:
Chronic pain syndromes due to nerve injury, neuroma, compression or scar-related nerve traction may occur all over the body. Surgical methods, e.g. reconstruction, neuroma resection and relocation, decompression or neurolysis are often helpful, yet treatment may be missed or fail due to lack of adaequete diagnostic imaging.

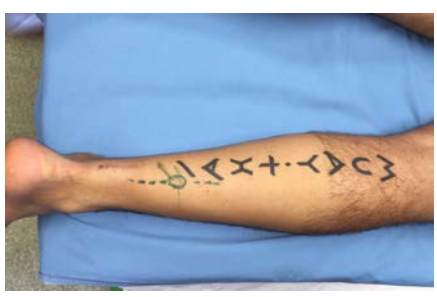
Objective:
This paper demonstrates the use of High-Resolution Nerve Ultrasound (HRUS) imaging combined with diagnostic nerve blocks to diagnose rare nerve-related pain syndromes and shows up, how helpful this high-resolution ultrasound is in diagnosing and planning the operative treatment. Sonography with a 23 MHz head was utilized.

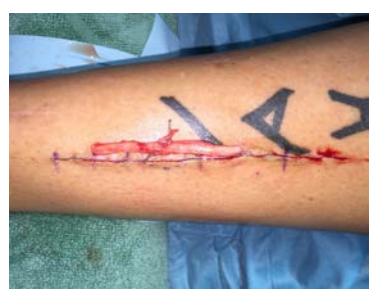


Localisation of injured peripheral nerves is often difficult – a lot easier using HRUS !

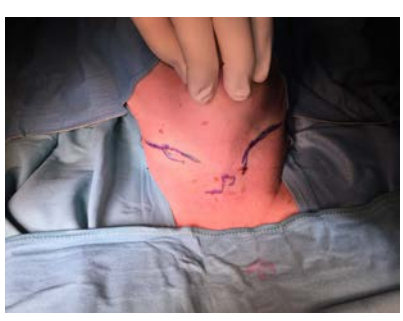
Results:
Clinical case reports including US findings with correlating surgical pathology on patients with damage to peripheral nerves are shown.

1: Preop blocking and marking of the sural nerve entrapped by suture after achilles tendon repair

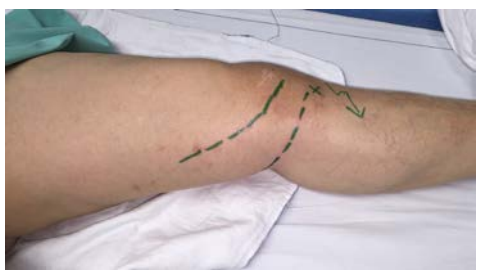




2: Preop blocking and marking of a neuroma of the nervus transversus colli after thyreoid resection



3: Preop blocking and marking of 2 infrapatellar nerves after total knee joint replacement



Conclusions:
HRUS is a readily available, inexpensive, quick and highly versatile tool to diagnose rare causes of nerve pain. It allows a precise visalization, localization, investigation with test blocks and ink or wire marking of nerve branches with a minimal diameter of about 1 mm. Therefore, HRUS offers many significant advantages for the treating surgeon or interventional radiologist caring for individuals affected by neurogenous pain syndromes.