Neuberg ★ STAR
IMAGING & LABS

Newsletter@Star

Vol 3 April-June 2026

Greetings from the team at Neuberg Star Imaging and Labs.

We are pleased to present the third volume of our Newsletter featuring clinical cases and new techniques being developed and employed in day-to-day practice, to improve imaging services for you and your patients. We continue with our format of introducing you to two more of our young and dynamic Consultant Radiologists, and our Wakad centre. This Newsletter also showcases some exquisite, never-before seen Ultrasound images of skin related pathologies. We hope you find as much pleasure in reading this edition as we did in compiling it for you.

Warm regards,
Dr. Sanjay Vaid MD

Know Your Centre

Star Imaging Wakad was established in July 2019 to serve Wakad and the surrounding areas with advanced diagnostic imaging services. The centre is equipped with state-of-the-art technology, including a Philips Ingenia Elition 3T MRI, Digital Mammography with Tomosynthesis, BMD, Digital X-Ray, Sonography, and Colour Doppler, enabling accurate and reliable diagnosis for patients.

In collaboration with Neuberg Diagnostics, we now offer complete integrated diagnostics — Radiology, Pathology, and Genomics — all under one roof. With modern equipment, skilled professionals, and a patient-focused approach, Neuberg Star is committed to delivering accurate, timely, and high-quality diagnostic care to support better clinical outcomes for the community.

Know Your Radiologists

Dr. Sukhada Kulkarni

Dr. Sukhada Kulkarni completed her MBBS from B. J. Medical College, Pune, and obtained her MD in Radiodiagnosis from Lokmanya Tilak Municipal Medical College (LTMMC), Sion, Mumbai. She subsequently worked as an Assistant Professor at B. J. Medical College and Sassoon General Hospital, Pune, for three years.

The COVID-19 pandemic marked a turning point in her career, following which she joined Star Imaging and Research Centre as a Consultant Radiologist. Subsequently, she underwent focused training in musculoskeletal imaging at Star Imaging and Research Centre. She developed a keen interest in the expanding role of ultrasound in musculoskeletal imaging and chose to pursue this subspecialty with dedication.

She currently performs all ultrasound examinations, with special expertise in musculoskeletal and nerve ultrasounds, including image-guided interventions. She is also an integral part of the head and neck imaging team and continues to be actively involved in body imaging and breast imaging.

Dr. Sukhada is actively involved in teaching and is known for her commitment to high-quality patient care, precise imaging interpretation and passion to excel.

Dr. Bhagyashri Parmar

Dr. Bhagyashri Parmar completed her MBBS from Seth GSMC & KEMH, Mumbai, DMRD from Nagpur, and DNB from Nanavati Hospital, Mumbai.

With 5 years of experience, she specializes in women's imaging, including mammography and body imaging.

She focuses on providing accurate and timely reports to support patient care and ensure effective communication with clinicians.

Dr. Parmar is determined to improve diagnostic quality through constant learning and new ideas and is deeply committed to contributing to our diagnostic services.

Dr. Daneshwari Kalage MD
Consultant Radiologist

CASE

A 39 year-old asymptomatic female underwent a routine sonographic evaluation of the abdomen and pelvis.

The sonography study revealed right sided moderate hydronephrosis without any calculus.

A contrast-enhanced CT Urography was performed to look for the possible etiology.

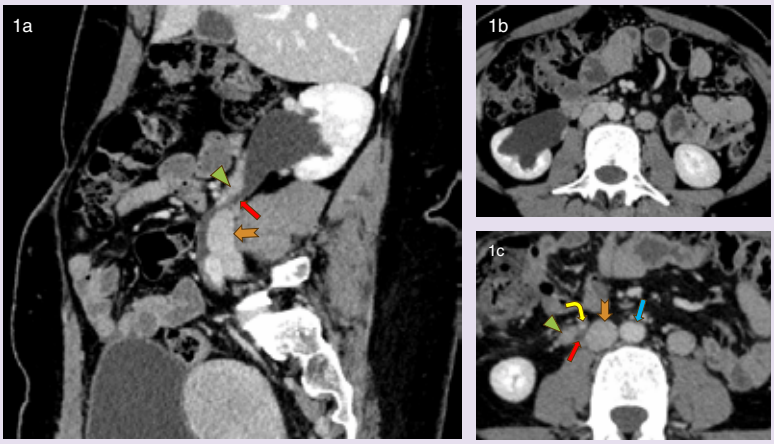


Figure 1. CT venous phase: Oblique sagittal MPR image (a) demonstrates compression of right proximal ureter (red arrow) between the right IVC (notched arrow) and dilated right ovarian vein (arrow head) with resultant upstream hydronephrosis. Axial CECT images (1b, 1c) show moderate right hydronephrosis due to crossing of the dilated right ovarian vein anterior to the ureter at its confluence with the fenestrated segment of the right IVC causing extrinsic compression of proximal ureter. No calculi are seen. In addition, fenestration of the infrarenal segment of right IVC (bent arrow) and persistent left IVC (blue arrow) are noted.

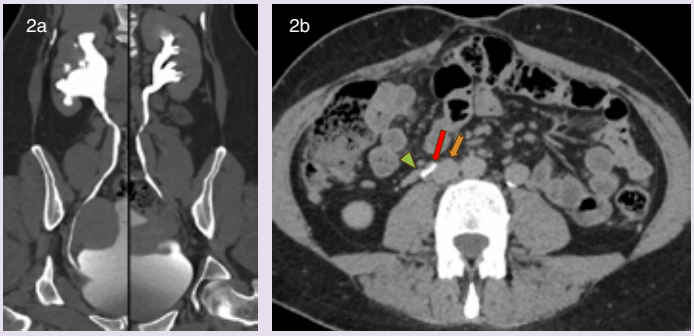


Figure 2. CT Urography: Coronal CT image (2a) demonstrates moderate right hydronephrosis with narrowing at the right proximal ureter. Distal right ureter is not dilated. Axial CECT image (2b) shows flattening of the right proximal ureter (arrow) due to the extrinsic compression between the dilated right ovarian vein due to IVC anomalies (arrowhead) and the right IVC (notched arrow).

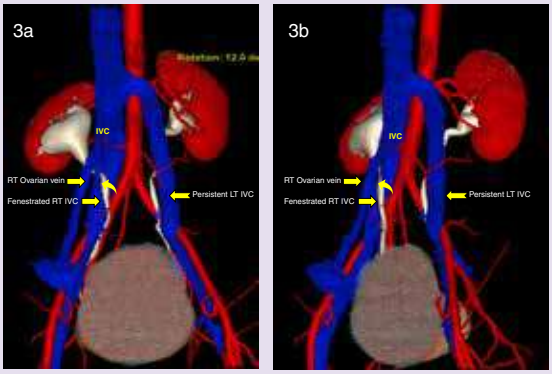


Figure 3. 3D volume-rendered CT images demonstrating complex venous anatomical variants. Rotational views (3a, 3b) illustrate a markedly dilated right ovarian vein (due to complex IVC anomalies) draining into a fenestrated segment of the right IVC; dilated ovarian vein is compressing the right proximal ureter (curved arrow) resulting in hydronephrosis. Note the associated persistent left IVC draining into the left renal vein.

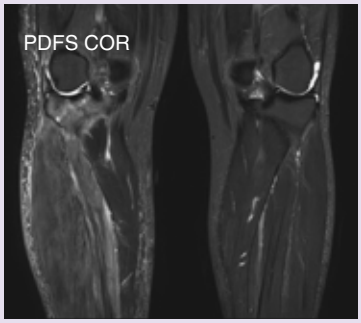
Ovarian Vein Syndrome with Complex IVC Variants

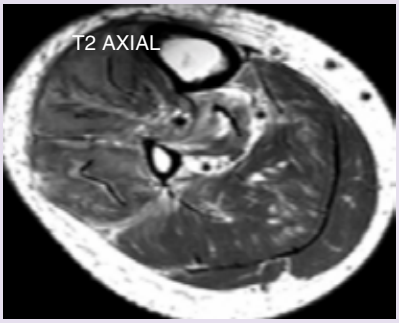
- **Congenital IVC anomalies** (persistent left IVC, duplication, fenestration) occur in ~0.3–3%.
- **Ovarian Vein Syndrome** (OVS) is a rare cause of ureteral obstruction resulting from external compression of the ureter by a dilated ovarian vein. Pelvic congestion is a common cause. OVS secondary to IVC anomalies is exceptionally rare.
- **Pathophysiologic Basis:** Altered venous drainage→abnormal pressure gradients→ovarian vein dilatation→Dilated ovarian vein crosses ureter→focal extrinsic compression of ureter→HDN.
- **Clinical Significance:**
  - Important for surgical planning and IVC filter placement.
  - Essential recognition before venous embolization.
- **Take-home Message:**
  - Congenital IVC variants can alter venous flow dynamics, leading to selective ovarian vein dilatation and secondary ureteral compression — an uncommon but important cause of obstructive uropathy.

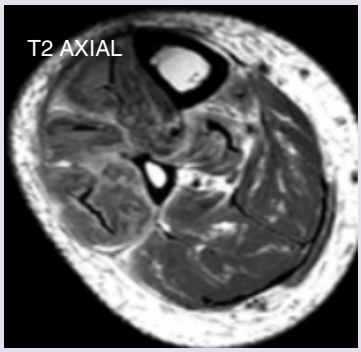
Dr. Aniket Jadhav MD
Consultant Radiologist (MSK Imaging Division)

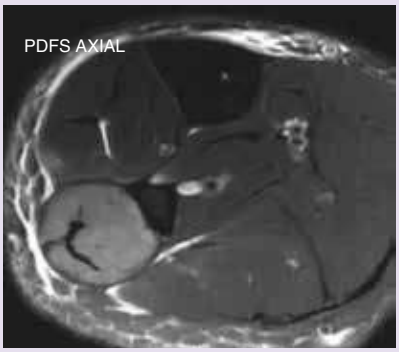
CASE 1 – Acute Compartment Syndrome

A 36 year-old male with a history of recent motor vehicular accident presented with excruciating leg pain. X-ray revealed a comminuted proximal fibular fracture. Distal pulses were palpable.





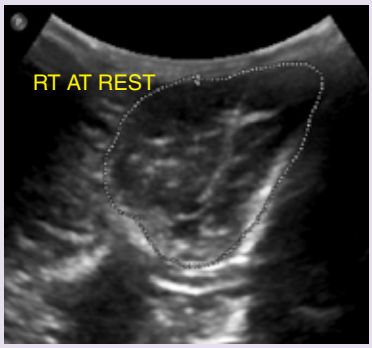


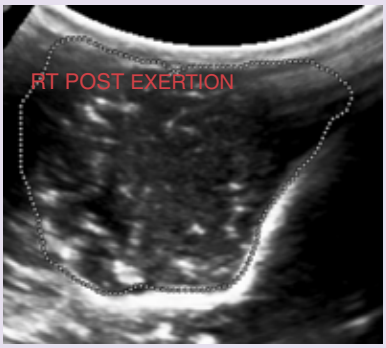


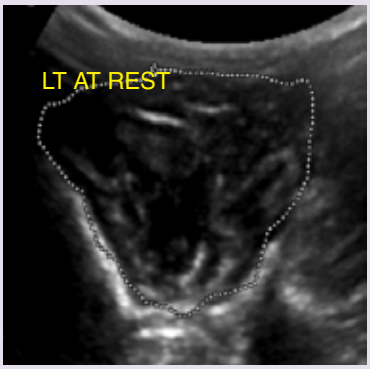
- PDFS coronal image shows markedly oedematous lateral / peroneal compartment muscle bellies.
- This is further corroborated on the axial T2 images which also show oedematous anterior compartment.
- PDFS axial image shows loss of normal fascicular architecture within the peroneal compartment with markedly oedematous peroneal muscle bellies. Also noted is facial bulging in all directions due to the increased pressure within the compartment.

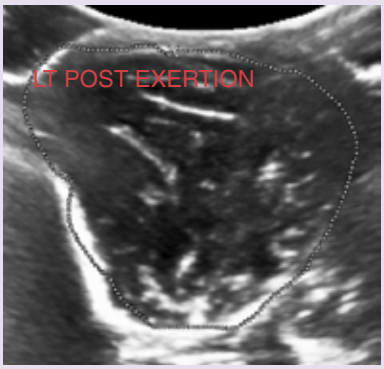
CASE 2 – Chronic Exertional Compartment Syndrome

A 46 year-old male with pain over bilateral shins with slightly weak dorsiflexion after walking / running, since the past 20 years.







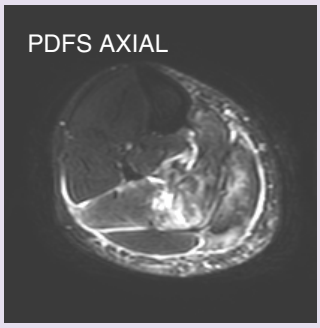


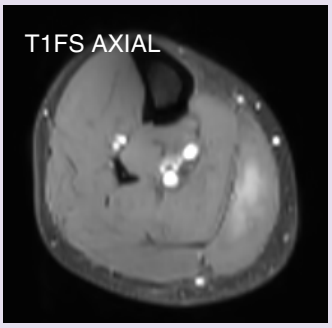
- USG examination was done both at rest and immediately post exertion on both legs, examining the anterior compartment with the patient's complaint of pain.
- Bilateral legs tibialis anterior muscle bellies showed marked increase in volume with simultaneous hypoechogenicity due to induced oedema immediately post exertion.
- Concomitant increase in the vascular supply was also observed in the form of declining resistive indices in the anterior tibial artery.

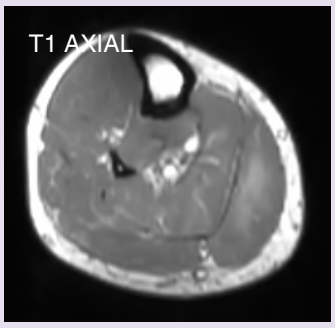
Dr. Aniket Jadhav MD
Consultant Radiologist (MSK Imaging Division)

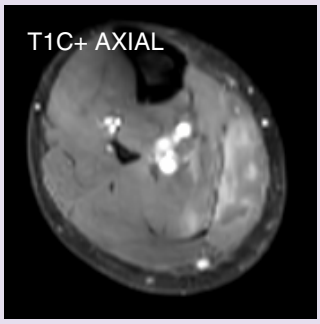
CASE 3 – Myonecrosis

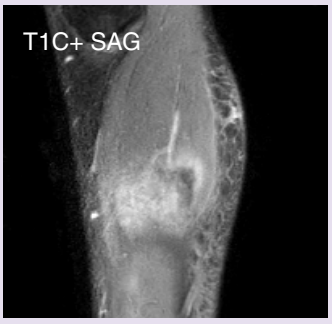
A 29 year-old male with an old history of RTA and long standing, non-treated lower limb pain.

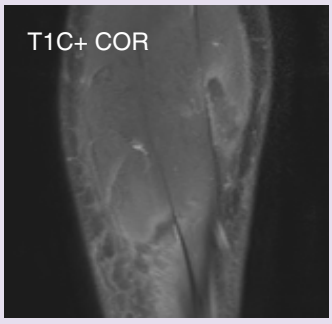












- In longstanding cases of compartment syndromes, the vascular supply of the muscle bellies can be compromised, leading to areas of myonecrosis.
- The diffusely oedematous posterior compartment show areas of T1 shortening on axial images suggesting haemorrhagic products.
- Subsequent contrast (C+) examination done in axial, sagittal and coronal planes reveal areas of non-enhancement within the posterior compartment muscle bellies which are pathognomonic for the diagnosis of myonecrosis. Peripheral contrast enhancement represents granulation tissue / reactive hyperaemia at the interface of the viable and non-viable tissue.

Compartment Syndrome

- Compartment syndrome constitutes a surgical emergency due to the increased pressures resulting in neurovascular and subsequent muscle tissue compromise.
- **Vicious cycle:** Increased compartment pressure→Venous outflow obstruction→Increased interstitial pressure→Microvascular compromise→Muscle ischemia→More oedema.
- **Clinical presentation of compartment syndrome is**
  1. Pain which is exacerbated by passive stretch of the involved muscle groups.
  2. Pallor due to vascular compromiseiii. Paresis due to nerve ischemia.
  3. Paresis due to nerve ischemia.
  4. Diminished / absent pulses.
  5. Differing temperatures between affected and normal limb.
- Emergent fasciotomy is done as a definitive treatment in acute compartment syndrome as well as in chronic exertional compartment syndrome.
- Myonecrosis represents dead muscle tissue which cannot be salvaged even with a fasciotomy and is a complication of non-treated compartment syndromes. Myonecrosis can further lead to rhabdomyolysis and renal failure.
- MRI helps in diagnosing acute compartment syndromes, delineating the extent of the compartments involved as well as determining the viability of a fasciotomy.

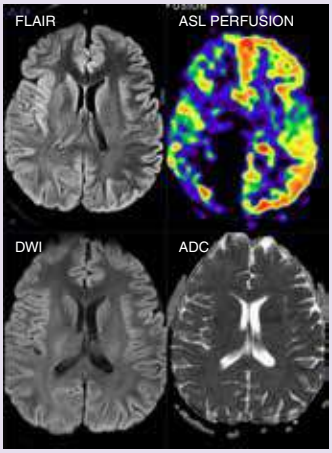
Dr. Yogeshwari Deshmukh DMRD, DNB

Chief, Neuroradiology Imaging Division

CASE

A19 year-old male with focal seizure and persistent unilateral headache.

- 19 year-old male presented with the first episode of right-sided focal convulsions
- General examination and blood investigations: within normal limits
- EEG: Normal
- Observed for 24 hours and discharged on conservative management
- No further seizures but persistent episodes of left-sided headache
- MRI performed 1.5 months later due to ongoing symptoms



MRI Findings

- T2 flair axial images reveal subtle hyperintense signal in the left cerebral hemispheric cortex with associated hypointensity in the underlying subcortical white matter.
- ASL perfusion images revealed hyperperfusion in the entire left hemispheric cortex without respecting vascular boundaries.
- There was no restriction of diffusion-on-diffusion weighted images.

Diagnosis

- The presence of subtle unilateral cortical FLAIR hyperintensity with associated hemispheric hyperperfusion not conforming to vascular territories, absence of diffusion restriction, and the clinical presentation with lack of systemic features raised suspicion for unilateral cerebral cortical encephalitis within the spectrum of MOG antibody–associated disease.
- Subsequent serological testing confirmed the presence of anti-MOG antibodies, establishing the diagnosis of MOG-associated unilateral cerebral cortical encephalitis (UCCE phenotype).

Imaging Differentials

- Post-ictal cortical signal abnormalities: demonstrate transient cortical edema and hyperperfusion. However, these changes typically resolve within days and generally show restricted diffusion due to cytotoxic edema.
- Herpes simplex encephalitis usually demonstrates a predilection for the medial temporal lobes and limbic structures, frequently associated with diffusion restriction, hemorrhagic components, and systemic infectious manifestations, none of which were observed in this patient.
- Autoimmune encephalitis: The lesion distribution of autoimmune encephalitis is frequently located in the limbic lobe. Positive workup for those antibodies is critical to accurate etiology diagnosis.
- Rassmussen's encephalitis is characterized by focal epilepsy, progressive hemiplegia, and cognitive decline with unilateral hemispheric focal cortical atrophy in the chronic stage.

Unilateral Cerebral Cortical Encephalitis (UCCE)

- Myelin oligodendrocyte glycoprotein (MOG), a protein exclusively expressed on the surface of oligodendrocytes and myelin sheaths in the central nervous system (CNS), is immunopathogenetically distinct from classic multiple sclerosis and AQP4-IgG-positive neuromyelitis optica spectrum disorders.
- Antibodies against MOG can be associated with a spectrum of clinical phenotypes, such as optic neuritis, myelitis, aseptic meningitis, encephalitis, and acute disseminated encephalomyelitis.
- However, unilateral cerebral cortical encephalitis (CCE) is a rare anti-MOG phenotype.
- The common symptoms of anti-MOG-associated unilateral CCE include seizures, headache, fever, and cortical symptoms.
- The characteristic finding on magnetic resonance imaging (MRI) is unilateral cortical hyperintensities on T2-weighted fluid-attenuated inversion recovery (T2-FLAIR) sequences.
- Recently, a new term "FLAMES" has been proposed to characterize the clinical and radiological syndrome in patients with unilateral cortical 'FLAIR-hyperintense Lesions in Anti-MOG-associated Encephalitis with Seizures.'
- Early recognition is essential, as MOG-associated disease is typically steroid responsive and carries a favorable prognosis with appropriate treatment.

Breaking New@STAR — "The Derma-echoes"

Dr. Joban Babhulkar DMRD, DNB (Radiology)
Consultant Musculoskeletal Ultrasonologist

CASE 1 – Characterization of Superficial Lumps and Bumps

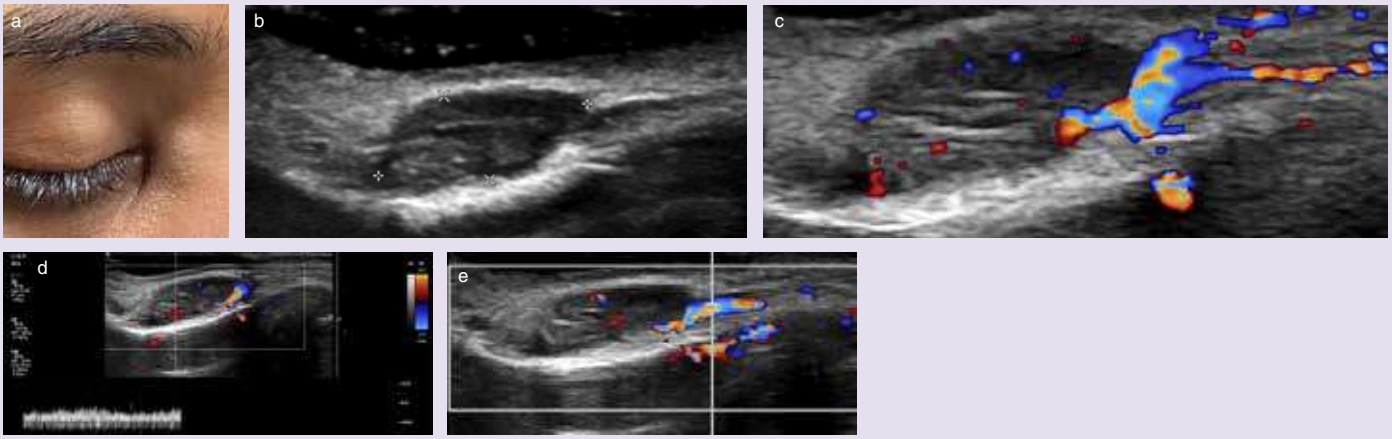


Figure 1. HRUS requested for subtle, painless lump on medial canthus of the eye with discolouration in a young girl (a) of 18 years.

HRUS performed with a small footprint 22 MHz ultrasound transducer revealed that the site of the lump corresponds to a small soft tissue lesion within the dermal and hypodermal layers, elliptical in shape and heterogenous in echotexture (b). It was well defined, well marginated, without any calcifications. Colour Doppler showed multiple anechoic channels showing low velocity venous flow within this lesion (c). A draining vein could be demonstrated (d). These features are consistent with a low flow vascular malformation within the skin of the medial canthus.

CASE 2 – Non Healing Corn on the Heel

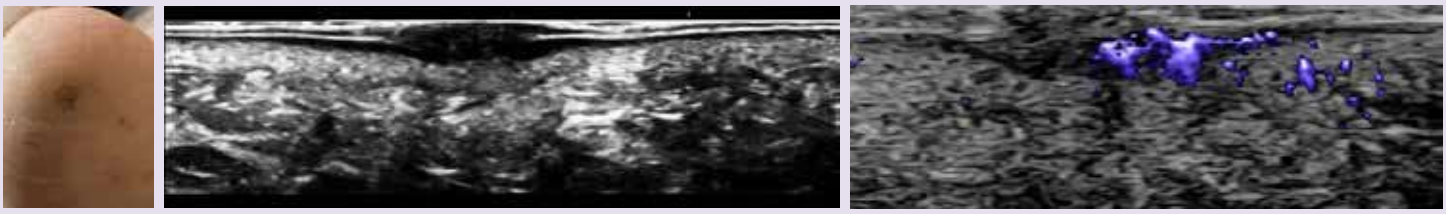


Figure 1. HRUS was requested for a painful, non-healing corn on the heel of a 45 year-old lady.

HRUS performed with a standard linear (7 – 12 MHz) ultrasound transducer and a small footprint 22 MHz ultrasound transducer revealed a hypoechoic, fusiform lesion involving the epidermis and the superficial dermis. Subtle posterior acoustic enhancement was noted. On Colour Doppler, it was intensely vascular. These features are classical findings in a plantar wart. Plantar warts (verrucae plantaris) are common cutaneous lesions of the plantar foot caused by the human papilloma virus (HPV). High index of suspicion is needed to differentiate plantar warts from unresolving painful corns of the foot. HRUS appearance is quite dramatic and diagnostic and can also be employed for monitoring therapeutic response.

CASE 3 – Ultrasound Grading of Hiadrenitis Suppuritava

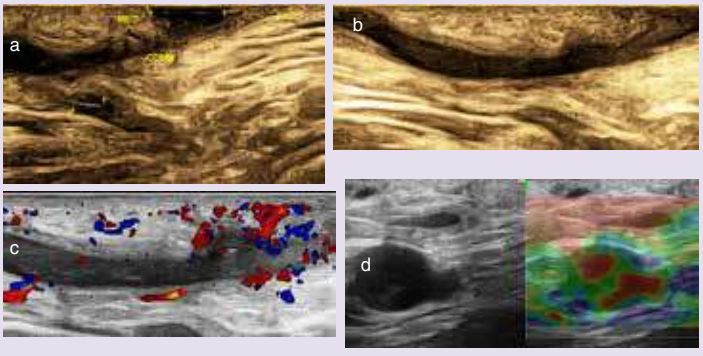


Figure 1. HRUS requested in a young girl with clinical bilateral Hiadrenitis suppuritava that was not responding to standard treatment.

HRUS performed with a small footprint 22MHz ultrasound transducer demonstrated multiple complex cystic collections which were communicating with each other (a and b). Presence of 2 or more fistulous communications and sinus tracts upgrades the disease burden, often necessitating surgical exploration and debridement. Colour Doppler (c) demonstrates perilesional activity and compression elastography (d) is very valuable in determining the prescence of fibrosis and scarring which may cause the non-response to standard treatment.

Breaking New@STAR — "The Derma-echoes"

Dr. Joban Babhulkar DMRD, DNB (Radiology)
Consultant Musculoskeletal Ultrasonologist

CASE 4 – High Resolution Ultrasound of the Nail Unit

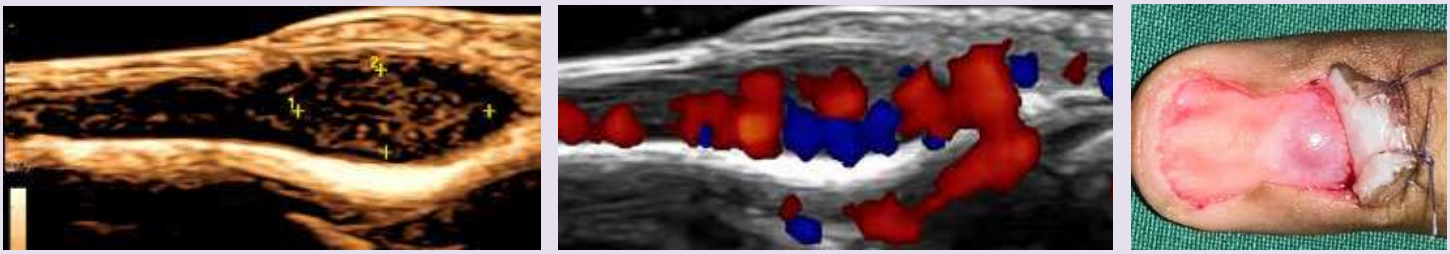


Figure 1: Painful lesion in the nail bed is a tiny well-defined soft tissue lesion which is intensely vascular. HRUS diagnosis is a glomus tumour confirmed on histopathology.

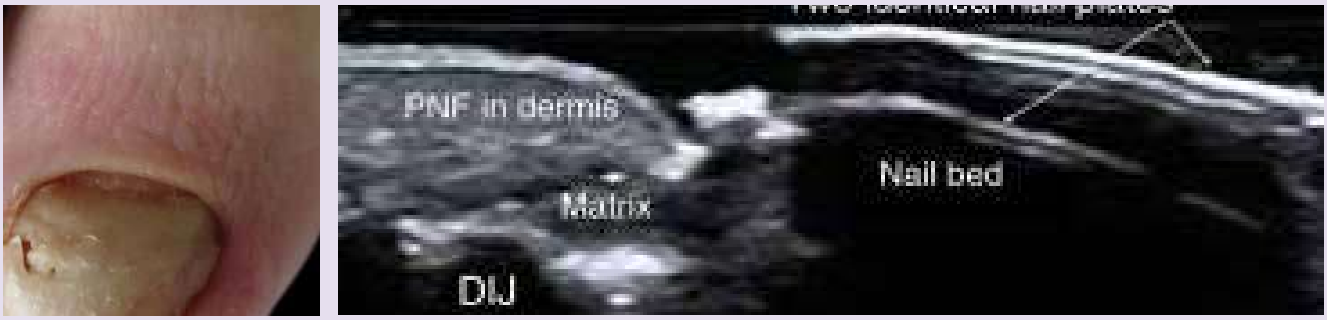


Figure 2: Painful nail fold even after surgical nail removal. HRUS shows overlapping nail plates with hypoechoic intervening space. Distance between root of nail bed and distal phalanx is reduced. These are classic findings of retronychia.

Figure 3: A 28 year-old lady with whitish discoloration and mild discomfort of the nail on the little finger for the past 3 months. HRUS shows thickened nail plates with loss of interplate gap, thick nail matrix, and posterior acoustic shadow due to hyperkeratosis.

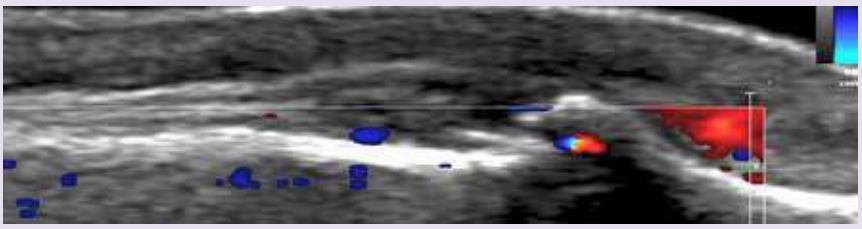
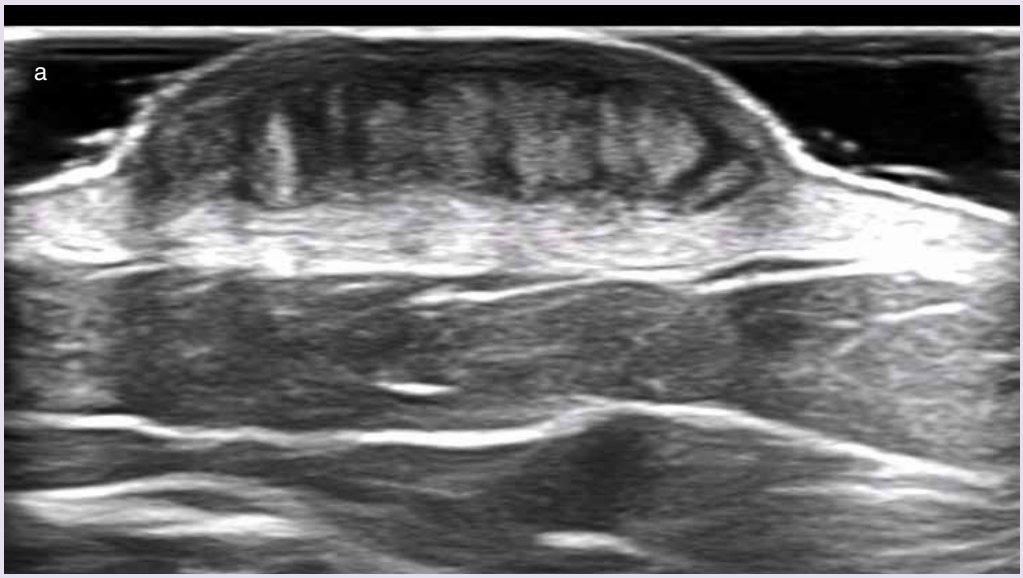


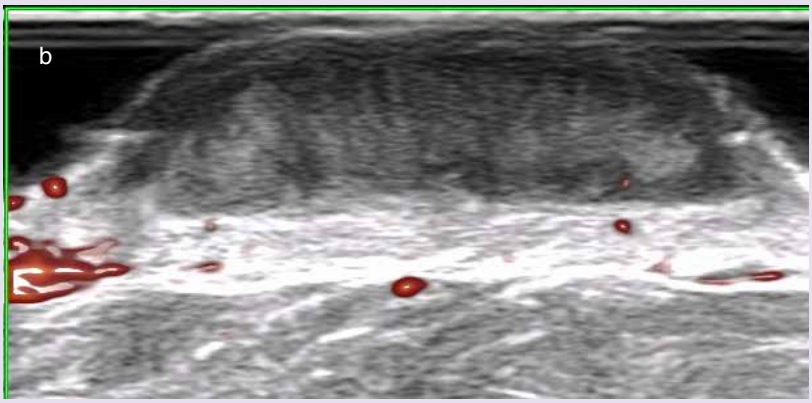
Figure 4: The nail bed functions as a synovio-entheseal unit. HRUS of a patient with psoriatic arthritis shows thick extensor tendon, synovial thickening, and hyperemia on Power Doppler.

Breaking New@STAR — "The Derma-echoes"

Dr. Joban Babhulkar DMRD, DNB (Radiology)
Consultant Musculoskeletal Ultrasonologist

CASE 5 – Medical Cosmetology





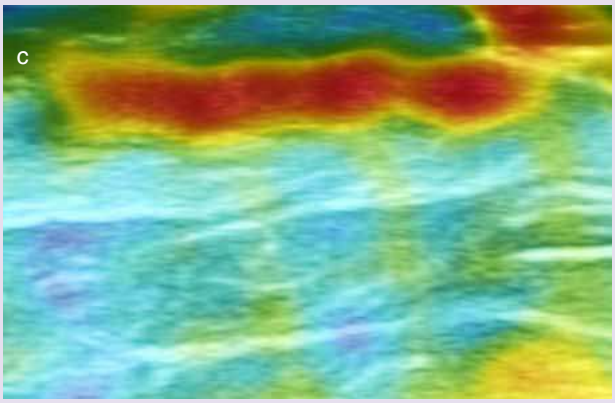


Figure 1: A 55 year-old lady with keloid formation after BCG vaccination.

HRUS was requested for characterization of the lesions for treatment planning: HRUS on gray scale (a) showed focal hypoechoic, heterogenous dermal thickening displacing the epidermal echo superficially. Tongue-shaped peripheral extension is noted without any deep extension into subcutaneous tissues.

Colour Doppler (b) shows minimal perilesional vascularity. Compression elastography (c) shows significant central softening of this lesion.

The Team at Neuberg Star Imaging & Labs

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Yogeshwari Deshmukh • Unmesh Bhosale • Amit Zope • Aniket Jadhav

Akshata Phade • Swati Shah • Sukhada Kulkarni • Bhagyashri Parmar

Nishita Pradhan • Daneshwari Kalage

Manali Khedkar • Prashant Kokate

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