Normal and pathologic peroneal nerve on routine MRI of the knee

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Learning objectives

On every routine MR of the knee that is performed, the peroneal nerve can be well visualized. Thorough knowledge of the relevant anatomy on its course around the knee is an important aid for the radiologist to suggest a location-specific diagnosis.

The purpose of this electronic poster is threefold:

1. To present the normal anatomy of the peroneal nerve around the knee
2. To provide a short overview of muscle denervation features
3. To review the most common pathology as encountered on routine magnetic resonance (MR) imaging of the knee.
A. Anatomic overview

The common peroneal nerve is the lateral division of the sciatic nerve. It courses from the posterolateral side of the knee around the biceps femoris tendon and the fibular head to the anterolateral side of the lower leg, its relation to the most important landmarks is illustrated on a schematic drawing (Fig. 1a). On MR imaging the peroneal nerve and its branches can most easily be identified on axial T1-weighted imaging (WI) as small bundles of fascicles cushioned in surrounding fatty tissue (Fig. 1b, c and d).

The peroneal nerve has three unique anatomical features that make it susceptible to injury:

1. Relative paucity of epineural supporting tissue (rendering the nerve more susceptible to compression) (Fig. 2)
2. Superficial course around the fibular neck (where it can be compressed or stretched in case of trauma) (Fig. 3)
3. The fibular tunnel formed by the origin of the peroneus longus tendon at the proximal fibula (predisposing to compression neuropathy) (Fig. 3)

At the level of the fibular neck the common peroneal nerve trifurcates in three branches:

1. Superficial peroneal nerve
2. Deep peroneal nerve
3. Articular branch (also smaller branch, also called recurrent branch)

This articular branch lies in close relationship with the proximal tibiofibular joint and has been shown to be a very common location and entrance port for intraneural ganglia (Fig. 1a).

The superficial peroneal nerve provides motor innervation to the muscles of the lateral compartment (Fig. 5):

- Peroneus longus muscle
- Peroneus brevis muscle

The deep peroneal nerve provides motor innervation to the four muscles of the anterior compartment (Fig. 6):

- Tibialis anterior muscle
- Extensor digitorum longus muscle
- Extensor hallucis longus muscle
- Peroneus tertius muscle
The tibialis anterior and extensor digitorum longus muscle are almost always visible on the most caudal slices of the knee on MR imaging.

B. General imaging features of denervation

The muscles of the anterior and lateral compartment are in close proximity to the knee. This provides additional information that is easily available to evaluate potential denervation of the peroneal nerve.

Three denervation patterns can be differentiated, but on imaging there is some considerable overlap with different patterns occurring at the same time.

1. **Edema**, corresponding to the acute phase. Hyperintense changes are first visible on short tau inversion recovery (STIR) images, followed by the fat suppressed T2-WI some days later (Fig. 7 and 8). This phase can last for 4 to 6 weeks.

2. **Atrophy**, corresponding to loss of muscle tissue. This becomes apparent after 2 to 3 weeks, especially on the T1-WI.

3. **Fatty replacement** of the muscle, corresponding to long standing denervation. It indicates the involved muscle fibers are inevitably lost and occurs after several weeks to months. Usually the entire muscle is affected, but in cases of partial denervation or collateral motor innervation, changes may be delayed or absent. Fatty replacement is best visualized on non-fat suppressed T1-WI (Fig. 9).
Fig. 1: Fig. 1 Anatomy of the peroneal nerve. Schematic drawing of the course of the peroneal nerve around the posterolateral corner of the right knee (a). The peroneal nerve is seen branching off the sciatic nerve, turning around the biceps femoris muscle (asterisk), passing through the peroneal tunnel between the insertion of the peroneus longus muscle (double asterisk) and the fibula. As it exits the tunnel, it trifurcates in a deep and superficial peroneal nerve and a recurrent or articular branch. The articular branch is the entrance port for intraneural ganglia originating (see section on intraneural ganglia) from the tibiofibular joint. Axial T1-WI at the level distal femur (b) shows the common peroneal nerve (white arrow) and the tibial nerve (black arrow) as they just branched off the sciatic nerve. Note the intimate relationship of the common peroneal nerve with the medial side of the biceps femoris muscle (asterisk). Axial T1-WI at the level of the fibular head (c) the peroneal nerve (white arrow) is found posteriorly and can be traced by the fat around it. The peroneal longus (asterisk) and anterior tibial muscle (double asterisk) are already seen at the most proximal parts of the lateral and anterior compartments. Axial T1-WI at the level just below the fibular neck (d) shows the superficial peroneal nerve (white arrow) and the deep peroneal nerve (curved arrow). Due to its small size and ascending course the articular branch is difficult to visualize.
**Fig. 2:** Fig. 2 Schematic drawing of a nerve (a) showing the microstructure of the fascicles (pink) embedded in the epineural supporting tissue or epineurium (blue). Schematic drawing demonstrating normal quantity of epineural supporting tissue (grey) around the fascicles (b) and the relative paucity of epineural supporting tissue in the peroneal nerve (c), contributing to its vulnerability.

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**Fig. 3:** Fig. 3 Schematic drawing of the peroneal tunnel, anterior view of the right knee (a). The superficial course on the lateral side of the fibular head makes the peroneal prone to direct injury (thin arrow). The common peroneal nerve can be easily compressed at the osteofibrous tunnel (thick arrow). The pink boxes at the level of the fibular head and neck correspond with the images in b and c. Axial T1-WI at the level of the fibular head (b) shows the expected location of the tail and signet ring sign. The tail sign corresponds to the origin of an intraneural ganglion (arrow) from the proximal tibiofibular joint. The signet ring sign corresponds to the extension of an intraneural ganglion in the common peroneal nerve (arrowhead). Axial T1-WI at the level of the fibular neck (c) shows the expected location of the transverse limb sign. The transverse limb sign corresponds to an intraneural ganglion extending in the horizontal course of the deep peroneal nerve.

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**Fig. 4:** Fig. 4 Schematic drawing of a cross section of the right lower leg. The anterior compartment contains the anterior tibial muscle (TA), extensor hallucis longus muscle (EHL) and the extensor digitorum longus muscle (EDL). The neurovascular bundle, comprising the deep peroneal nerve (arrow), runs between the tibialis anterior and extensor hallucis longus muscle. The lateral compartment contains the peroneus longus muscle at this level. The superficial peroneal nerve (arrowhead) courses anteriorly in the lateral compartment along the intermuscular septum between the anterior and lateral compartments.

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Fig. 5: Fig. 5 Lateral compartment of the lower leg. Schematic drawing (a) showing the peroneus longus (PL) and brevis muscle (PB). Schematic drawing (b) showing the sensory innervation supplied by the superficial peroneal nerve (yellow area) and by deep peroneal nerve, which is limited to the first digit interspace (blue). Image copyrighted by the University of Washington Musculoskeletal Atlas. Used with permission. http://depts.washington.edu/msatlas/

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Fig. 6: Fig. 6 Muscles of the anterior compartment. Schematic drawing showing from medial to lateral the tibialis anterior muscle (TA), the extensor hallucis longus (EHL) on a lower level, the extensor digitorum muscle (EDL) and the peroneus tertius muscle (PT) distally and laterally. Image copyrighted by the University of Washington Musculoskeletal Atlas. Used with permission. http://depts.washington.edu/msatlas/

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Fig. 7: Fig. 7 Acute denervation in the anterior compartment. Axial T2-WI showing a diffuse hyperintense signal in the tibialis anterior (arrow) and extensor digitorum muscle of the right lower leg (arrowhead). A hyperintense cystic structure is visualized along the course of the superficial (thick arrow) and deep peroneal nerve (curved arrow), in keeping with an intraneural ganglion cyst.

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**Fig. 8:** Fig. 8 Acute denervation in the lateral compartment. Axial fat suppressed T2-WI shows a diffuse hyperintense signal in the peroneus longus muscle (white arrow) of the left lower leg.

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**Fig. 9:** Fig. 9 Chronic muscle denervation. Axial (a) en sagittal (b) T1-WI showing fatty replacement in the tibialis anterior (arrowhead) and extensor digitorum longus muscle (thin arrow) and both atrophy and fatty replacement in the peroneus longus muscle (thick arrow) of the left lower leg. There is also prominent fatty replacement in the lateral head.
of the gastrocnemius muscle (asterisk). This patient had a resection of a Schwannoma at a more proximal level in the sciatic nerve.

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The spectrum of pathologic conditions can be divided into three major categories.

1. **Anatomical variants**
2. **Traumatic lesions** (ranging from relative minor direct compressive trauma to major fracture-dislocation)
3. **Compressive lesions** (most heterogeneous category, either from extraneural or intraneural etiology)

### 1. ANATOMICAL VARIANTS

The *osteofibrous tunnel* between the peroneus longus muscle and the fibula can be tightened by an ossification at the peroneus longus muscle origin or tug lesion (Fig. 10). A *peroneal tug lesion* typically occurs on the lateral side of the fibula, while a soleus tug lesion occurs on the medial side. It represents a rare cause of peroneal nerve neuropathy.

A variant in the *biceps femoris insertion* is described, forming an accessory tunnel, where compression may also occur.

### 2. TRAUMATIC LESIONS

Many of the injuries to the peroneal nerve are evident clinically or on electromyography and will not require imaging other than conventional X-rays for evaluation of bony trauma. Three basic mechanisms are involved:

- Traction
- Contusion
- Penetrating trauma

These mechanisms often coexist and differentiation amongst them is not always feasible clinically.

**Traction injuries**

Traction or stretching injuries of the peroneal nerve can occur following ankle inversion trauma, high-grade varus sprains of the knee, proximal fibular fractures (Fig. 11), posterolateral corner knee injury or dislocation of the knee. The greater the extent of damage to the bony and ligamentous structures, the more likely there is damage to the peroneal nerve (Fig. 12). A complete rupture of the nerve is most commonly found in case of **dislocation** with disruption of both the cruciate ligaments and posterolateral corner. Peroneal nerve palsy may also be associated with the placement of **oblique locking screws**.
Contusion

Contusion almost always results from direct impact, which may occur in soccer or contact sports. This results in a compression of the peroneal nerve against the proximal fibula. Patients present with lateral knee pain and signs of sensory or motor disturbance in the peroneal nerve area.

The nerve will appear thickened and edematous, resulting in a hyperintense signal on the T2-WI and hypointense signal on the T1-WI (Fig. 13). Even in the absence of a clear history of trauma, edema in the proximal fibula and the muscles of the lateral compartment should alert the radiologist to a potential associated lesion of the peroneal nerve.

Penetrating trauma

Penetrating wounds can result in a complete or partial disruption of the nerve fascicles. If the nerve sheath is disrupted and the fascicles are separated, the regenerating nerve fascicles and Schwann cells will sprout randomly creating a terminal 'neuroma' or stump neuroma. Spindle or lateral neuromas occur when the nerve sheath is partially or fully intact. They occur distally from the damaged nerve ending and represent a local response to the trauma with fusiform or lateral thickening (Fig. 14).

A terminal 'neuroma' or posttraumatic neuroma has a bulbous appearance from the tangle of fascicles, Schwann cells and associated fibrosis. It has low signal intensity on T1-WI and intermediate to high signal intensity on T2-WI (Fig. 14). It demonstrates variable enhancement after administration of Gadolinium contrast. Surgical clips or metallic fragments may cause artifacts, hampering visualization of nerve. The image of the proximal nerve terminating in such a posttraumatic neuroma is sometimes referred to as a 'balloon-on-a-string' or 'green-onion' appearance. Posttraumatic neuromas may resemble true neurogenic tumors, such as schwannomas or neurofibromas, but a split fat sign or target sign is typically absent (see section on peripheral nerve sheath tumors). In addition, any surrounding scar tissue suggests a traumatic etiology.

Miscellaneous traumatic lesions

The most subtle trauma that can cause denervation of the peroneal nerve is a closed deglovement injury, also known as a Morel-Lavallée lesion. Deglovement implies a shearing between the fascia and the subcutaneous tissues. This creates a potential space that fills up with serosanguinous fluid. A subcutaneous sensory branch passing through the fascia can be lacerated resulting in local hypoesthesia, as can happen to the superficial peroneal nerve in the lower third of the lateral compartment (Fig. 15). On T1-WI images it may appear hyperintense due to the methemoglobin content. It may contain fluid-fluid levels resulting due to sedimentation of blood components and occasionally entrapped fat globules may be present. An inflammatory reaction commonly creates a peripheral capsule. This capsule appears hypointense on all imaging sequences and may
show some patchy enhancement. The location of the lesion and the history of trauma often suggest the diagnosis, although there may be a remote history of trauma (3 months to 34 years). This may sometimes cause confusion with a soft tissue tumor, especially if the lesion has evolved to a chronic organizing hematoma with heterogeneous signal on T2-WI and patchy internal enhancement.

**Sequelae of trauma** can lead to chronic compression of adjacent nerves. Displaced bone fragments and heterotopic ossification are easily visualized on plain radiographs. Previously undetected fractures can cause internal joint derangement, which in turn lead to joint effusion and sometimes large synovial cysts compressing periarticular tissues and nerves (Fig. 16).

### 3. INTRANEURAL COMPRESSIVE LESIONS

**Intraneural ganglia**

Intraneural ganglia are relatively rare compared to extraneural ganglia, but they should be considered in case of unexplained foot drop. The peroneal nerve is the most common location for intraneural ganglion cysts. The presence of the **articular branch** explains the high incidence of this condition at the peroneal nerve. This branch serves as conduit for fluid, dissecting in the epineurium between the fascicles. Intraneural ganglia follow the path of the least resistance and extend proximally in the deep peroneal nerve, the common peroneal nerve and sometimes even in the peroneal division of the sciatic nerve. Surgical intervention must also address the **proximal tibiofibular joint** to avoid recurrence. On imaging intraneural ganglia appear as tubular structures contained within the nerve, with a hyperintense signal on T2-WI (Fig. 17) and a hypointense signal on T1-WI. They have no capsule and show no enhancement after administration of gadolinium contrast. Three signs have been described to aid in their diagnosis on axial imaging.

1. The **tail sign** indicates the cyst's origin anterior to the proximal tibiofibular joint (Fig. 3b)

2. The **transverse limb sign** (on adjacent slices on a lower level) indicates the horizontal cyst extension in the articular branch (Fig. 3c)

3. The **signet ring sign** (usually on the same image as the tail sign) indicates the cyst extending within the common peroneal nerve, displacing the nerve to the periphery. This creates an image of a ring (the cyst) with a signet (the peripherally displaced nerve) (Fig. 3b).

**Peripheral nerve sheath tumors (PNST)**

Three main histological types can be distinguished:
Benign forms:

1. **Schwannoma** (sometimes called neurilemmoma)
2. **Neurofibroma**

Malignant form:

3. the malignant peripheral nerve sheath tumor (**MPNST**)

**Schwannomas** are slow growing encapsulated tumors that can surgically be separated from the parent nerve. Occasionally in large or long standing schwannomas intraläsional degeneration with fibrosis, hemorrhage, calcification and cystic necrosis occurs, leading to a so called ancient schwannoma.

**Neurofibromas** are intimately associated with the nerve and cannot be separated. The vast majority of neurofibromas occurs as an isolated entity and not associated with neurofibromatosis type 1 (**NF-1**).

Definite differentiation between schwannomas and neurofibromas is not possible on imaging (Fig. 18). Typical imaging findings of benign peripheral nerve sheath tumors are a **fusiform shape**, the **nerve entering** proximally and exiting distally and a **split-fat sign**, representing the normal fat around a neurovascular bundle. A well-defined margin and the presence of the split fat sign suggest benignity.

**MPNST** represent about 6% of malignant soft tissue tumors. There is a strong association with **NF-1**, but only 5% of patients with **NF-1** develop **MPNST**. They typically occur in major nerve trunks and histologically they are indistinguishable from soft tissue fibrosarcoma. Clinical signs of malignant degeneration of a neurofibroma are non-specific. If imaging suggests an aggressive lesion, biopsy should immediately be performed to exclude malignant transformation. **MPNST** are heterogeneous on both T1-WI, T2-WI and after contrast administration, with dark areas corresponding to calcifications and hyperintense areas on T2-WI to central necrosis (Fig. 19). Three imaging signs are suggestive of a **MPNST**:

1. Size more than 5 cm (the average size of neurofibroma)
2. Heterogeneous appearance (due to intratumoral bleeding and areas of necrosis)
3. Infiltrative margin

Atypical presentation can occur and any other sarcoma may mimic a **MPNST** (Fig. 20).

**4. EXTRANEURAL COMPRRESSIVE LESIONS**
A less common cause of extrinsic compression is a cartilaginous exostosis. Cartilaginous exostosis or osteochondromas are developmental lesions rather than true neoplasms and are often referred to as an osteocartilaginous exostosis or simply exostosis. Hereditary multiple exostoses, an autosomal dominant syndrome, is more often associated with complications, mainly due to the mass effect on adjacent structures. Neurologic compression occurs most commonly at the peroneal nerve. On imaging a sessile and a pedunculated type can be differentiated. Bony structures can be evaluated on conventional X-rays, but MR imaging demonstrates to a better extent cortical and medullary continuity between the cartilaginous exostosis and the parent bone (Fig. 21). In cases of neurologic compromise the cartilaginous exostosis may exert a mass effect in the expected nerve location, but the nerve itself may be too small to discern. Signs of denervation in the dependent muscles strongly suggest neural compression or entrapment.

Ganglia originating from the proximal tibiofibular joint are a less common and less recognized entity than Baker’s cysts and meniscal cysts. These cystic masses can sometimes be very large and they are connected to the proximal tibiofibular joint with a fine stalk. The most common extension is in the tibialis anterior muscle and the peroneus longus muscle. Pressure on the peroneal nerve can occur (Fig. 22), leading to hypoesthesia or dorsiflexion weakness. Their imaging appearance is similar to other cystic structures, consisting of a hypointense signal on T1-WI, a hyperintense signal on T2-WI and a thin hypointense wall that enhances after administration of gadolinium contrast. Sometimes internal septa may be present.
Fig. 10: Fig. 10 Tug lesion in the peroneus longus tendon. Plain radiography of the right knee, anteroposterior (a) and lateral view (b) demonstrate an ossification at the origin of the peroneus longus tendon (arrows). This can cause tenderness over the peroneal tunnel and hypoesthesia and muscle weakness in the areas innervated by the peroneal nerve.

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Fig. 11: Fig. 11 Proximal fibular fracture. This patient underwent an open surgical osteosynthesis and developed a dropfoot after removal of the surgical material. Plain radiography of the right knee. Anteroposterior (a) and lateral view (b) demonstrate an oblique fracture with minimal displacement and slight lateral and posterior angulation.

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**Fig. 12:** Fig. 12 Posterior subluxation of the left knee. Sagittal T1-WI (a) showing complete rupture of the posterior cruciate ligament (thin white arrow) and a posterior subluxation of the tibia relative to the femur (positive posterior drawer sign). Axial T2-WI (b) showing acute denervation edema in the tibialis anterior (thick arrow), extensor digitorum (thin arrow) and peroneus longus muscle (curved arrow).

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**Fig. 13:** Fig. 13 Posttraumatic contusion of the peroneal nerve occurring after a direct trauma on the lateral compartment of the left knee. Direct trauma. (a) Axial fat suppressed T2-WI shows a thickened peroneal nerve (thick arrow) and hyperintense edema in the surrounding subcutaneous tissues, the fibular head (asterisk) and the peroneus longus muscle (thin arrow).

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**Fig. 14:** Fig. 14 Neuroma. Schematic drawing (a) showing the two types of nerve damage. A normal nerve (1 and 4) is surrounded by a nerve sheath on both sides. A complete disruption of the nerve (2) results in disorganized sprouting of nerve fascicles and fibrous tissue (3). This creates a ‘ball-on-a-string’ or ‘green-onion’ image, typical of a terminal (posttraumatic) neuroma. Wallerian degeneration occurs distally in the nerve. A partial laceration of the nerve (5) causes focal regeneration with hypertrophy of the nerve fascicles and fibrosis. This creates a focal asymmetrical thickening on imaging (6). Sagittal T2-WI image (b) shows a hypointense terminal neuroma (black arrow) after accidental surgical transection of the peroneal nerve. Note also associated hypointense strands of scar tissue (white arrowhead) in the adjacent subcutaneous fat.

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**Fig. 21:** Fig. 21 Large osteochondroma. Plain radiographs. Anteroposterior (a) and lateral view (b) demonstrate a large sessile exostosis (thick arrow) at the lateral tibia. There is obvious scalloping (arrow) and slight posterior displacement of the fibula, compatible
with a slow growing lesion. Coronal fat-suppressed T2-WI (c) shows a cartilage cap with hyperintense cartilage and partially mineralized hypointense cartilage with a cystic component (arrow). The maximum cartilage thickness is 16 mm. Axial T1-WI (d) shows the posteriorly displaced peroneal nerve with a preserved fascicular structure (thick arrow).

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**Fig. 20:** Fig. 20 Malignant peripheral nerve sheath tumor with atypical features. This lesion was initially diagnosed as a benign cystic lesion. Coronal T1-WI (a) showing a lesion with a homogenous signal intensity almost isointense to the surrounding muscle (arrow). Axial fat suppressed PD WI (b) shows almost homogeneous hyperintense signal (arrow) in the lesion with a thin hypointense rim. Axial T1-WI (c) after IV administration of gadolinium shows absence of enhancement (arrow).

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Fig. 19: Fig. 19 Myxoid liposarcoma compressing the peroneal nerve. Coronal PD T2-WI (a) showing a polylobulated homogenously hyperintense mass (thin arrows) in the anterior compartment of the left lower leg, larger than 5 cm. Axial T1-WI (b) shows the mass (arrowheads) extending in the anterior, lateral and deep posterior compartment. Note scalloping on the anterior side of the fibula (thick arrow) and the lateral side of the tibia (curved arrow). Axial T2-WI (c) shows a heterogeneous mostly hyperintense signal in the mass (asterisk), clearly delineating it from the surrounding muscle. There is no fat plane between the soleus muscle and the superficial posterior compartment (arrow), strongly suggesting extension in all four compartments of the lower leg. No muscle edema is present. Axial fat suppressed T1-WI after the administration of gadolinium contrast (d) shows peripheral enhancement of the mass.

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Fig. 18: Fig. 18 a-c Schwannoma of the left common peroneal nerve. Coronal T1-WI (a) showing a spindle shaped lesion just underneath the fibular head (arrow) with a signal that is isointense to the surrounding muscle. The peroneal nerve is seen entering proximally and exiting distally (arrowheads). The split fat sign is visualized around the lesion. Axial fat suppressed T2-WI (b) shows homogeneous hyperintense signal (arrow). Axial fat suppressed T1-WI after IV administration of gadolinium contrast (c) shows homogeneous enhancement (arrow).

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**Fig. 17**: Fig. 17 Recurrent intraneural ganglion. Axial T2-WI at the level of the right fibular neck (a) and just below (b) showing a cystic structure on the course of the horizontal part of the deep peroneal nerve, resulting in the transverse limb sign (arrow). On the lower level (b) the cyst in the deep peroneal nerve is even larger (asterisk). Displaced nerve fascicles may be seen anteromedially (arrow). On both images the signal intensity of the anterior tibial muscle (thick arrow) is slightly higher when compared to the surrounding muscles, suggesting denervation edema.

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Fig. 16: Large synovial cyst in a patient with a previously undetected proximal tibial fracture of the right knee. Plain radiograph (a) shows a pseudarthrosis in the lateral tibial plateau (arrows). Coronal proton density-WI (b) shows a large polylobulated lesion (arrows), hyperintense to muscle, originating from the fracture site and extending down the anterior compartment. There is no fatty replacement indicating long standing denervation.

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Fig. 22: Fig. 22 Extraneural ganglion. Photograph of the left knee (a) shows a local swelling on the posterolateral corner of the knee (thick arrow). Axial T2-WI (b) shows a cyst posterior to the proximal tibiofibular joint, displacing the peroneal nerve laterally (arrow).

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Fig. 15: Fig. 15 Deglovement injury or Morel-Lavallée lesion after a fall from a stand two weeks earlier. The patient sustained a direct trauma and complained about a hypoesthesia in the superficial peroneal nerve distribution. Axial T2-WI shows a hyperintense lesion (thin arrows), with no discernible wall, dissecting between the subcutaneous tissues and the crural fascia, in keeping of a lymphatic fluid filled space. A subtle intralesional hypointense fibrinous strand (thick arrow) is visible. Note also subtle muscle edema in the tibialis anterior, extensor digitorum and peroneus longus muscles.

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Conclusion

Thorough knowledge of the anatomy of the peroneal nerve around the knee and its specific features that add to its vulnerability are a prerequisite to understand the pathology as encountered in daily practice. There is a myriad of pathological conditions involving the peroneal nerve, most commonly traumatic and compressive lesions. Most notably are the intraneural ganglia, for which the peroneal nerve is the most common location, that are clinically not always suspected and that are proven to originate from the proximal tibiofibular joint.

MR imaging, with its exquisite soft tissue detail, is capable of providing an anatomical cartography of the peroneal nerve and the surrounding structures and is thus the most suitable imaging technique to provide diagnostic information regarding the etiology of peroneal nerve lesions.
References