

Can we consider the fascia as the target of our fascial block?

Fascia blocks have gained popularity over the past two decades. Initially, the fascia was considered a container to inject the local anaesthetic. The only known mechanism of action was the anaesthesia of the nerve that runs inside the fascial plane. However, the anatomical and clinical studies eluded the role of the fascia in acute and chronic pain.^[1] The microscopic and physiological characteristics of the fascia make it a target and not just a container for local anaesthetic deposition.

The fascial system comprises the three-dimensional continuum of soft, collagen-containing, loose and dense fibrous connective tissues that permeate the body. As highlighted by Suarez-Rodriguez V *et al.*, the fasciae have intrinsic innervation with Pacini and Ruffini corpuscles and, above all, are rich in free nerve endings, so they are believed to be involved in proprioception, balance and the perception of pain.^[2] Today, the fascia represents the structure of the human body with the greatest number of free nerve endings. It has been observed that the innervation is increased in the pathological fasciae.

Both in the execution of perioperative fascial blocks and in the treatment of chronic pain, the fascia must be considered an important generator of pain. The role of the fascia in the genesis of myofascial pain is known, but ultrasound elasto-sonography has only recently revealed a close relationship between the administration of local anaesthetic inside the fascia and the reduction of muscle stiffness and pain transmission.^[3] This article also highlights that the pain relief after the fascial block lasts much longer than the effect of the local anaesthetic itself. This consideration led to the conclusion that the analgesic effect depends not exclusively on the local anaesthetic, but on stimulating the free nerve endings within the fascia. In chronic pain syndrome, such as chronic myofascial syndrome, the fasciae may become a target for either local anaesthetic administration or electric and mechanical stimuli such as 'dry needling'.

The role of the fascial system as a pain generator was confirmed by the administration of warm saline solution alone within the fascial plane to a patient suffering from chronic myofascial syndrome, which

caused an immediate reduction in pain.^[4] If this were not the case, the saline solution would not have blocked the transmission of pain. The mechanical stimulation of the free nerve endings causes a remodulation of pain transmission. This clinical observation is in line with microscopic anatomy studies in which the intrafascial free nerve endings were frequently perpendicularly oriented to the collagen fibres, thereby increasing the likelihood of their activation by stretching the collagen fibres.^[5] The fascial hydrodissection with warm saline solution has as its objective not only the stimulation of the free nerve endings, but also the breakdown of the hyaluronan macromolecules to restore the physiological sliding to the fascia.^[6]

As highlighted by Fusco *et al.*,^[1] in an expert's opinion, the success of a fascial plane block is often unpredictable and dependent on several factors, including the characteristics of the fascia itself. For example, the fasciae may have connective septa inside, which influence the diffusion of the local anaesthetic and, therefore, the effectiveness of the block.^[7] For this reason, the fascial plane blocks must be performed dynamically to break the connective septa and facilitate the spread of the local anaesthetic.^[1]

Considering the fascia as a target would open up new fields of application of fascia blocks in acute and chronic pain management.

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