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Neurolysis knee genicular nerves: new landmarks

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INTRODUCTION

In some cases of advanced knee osteoarthritis, it is useful to proceed with neurolysis of the genicular nerves. Radiofrequency or cryoneurolysis can be used. The classic reference points, after careful anatomical studies, have been modified. Their evaluation has always been performed by means of scopy, currently ultrasound guidance is preferred. The deflection between the femoral metaphysis allows to reach the medial branch of the nerve that innervates the vastus intermedius muscle and laterally the lateral branch of the same nerve. The supero-medial genicular nerve can be intercepted at the tubercle of the adductor maximus tendon. The supero-lateral genicular nerve is intercepted supero-medially to the bony prominence which identifies, inferiorly, the tendon of the popliteus muscle. The infero-medial genicular nerve is correctly identified in the classic deflection point between the tibial metaphysis and the diaphysis where the infero-medial genicular artery can also be visualized. It can be useful to treat the infrapatellar branch of the saphenous nerve which can be visualized by ultrasound.

METHODS

We performed the ultrasound-guided procedure on ten patients; using cryoneurolysis, and comparing the effects of sensory stimulation during the execution and the intensity of the NRS pain three months later.

RESULTS

During the procedure, nothing changes for the identification of the infero-medial genicular nerve. The new bony landmarks allow for more convincing responses to stimulation and in any case is performed the treatment of nerve's branches that innervate the vastus intermedius muscle using conventional landmarks. Very useful, even if associated with the loss of skin sensitivity, is the ablation of the infrapatellar branch of the saphenous nerve. To avoid motor problems, the external inferior part is not treated, here the ascending branch of the common peroneus, directed to the inferior lateral part of the joint capsule, could be targeted. The NRS pain reduction assessment appears more convincing than in ten other cases compared and treated on conventional points.

CONCLUSIONS

Recent anatomical studies carried out by P. Peng have shown that the superior genicular nerves run more inferiorly and posteriorly than the classic bony landmarks where the branches of the nerve that innervate the vastus intermedius muscle are intercept.

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