

Termino-lateral neurorrhaphy

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Abstract

The first attempts at end-to-side neurorrhaphy were at the beginning of the last century. These authors considered that an incision in the donor nerve was essential in order to promote direct contact between the two nerves. All have resulted in considerable donor nerve morbidity, thus the technique was abandoned until the early nineties.

The last 16 years have seen a growing interest regarding a technique for nerve repair named termino-lateral (end-to-side) neurorrhaphy. End-to-side neurorrhaphy is one of the alternative methods for nerve reconstruction when direct termino-terminal nerve repair is impossible. This type of neurorrhaphy has been experimentally and clinically investigated. A large body of experimental studies have shown that end-to-side neurorrhaphy, in fact, is able to induce collateral sprouting from donor nerve's axons which is at the basis of the massive repopulation of the distal stump. In termino-lateral neurorrhaphy three main ideas should be considered: 1. the collateral sprouting of the axons the donor nerve, 2. the ability of collateral axons to pierce the conjunctive layers in order to reinnervate the recipient nerve and 3. the changes of the single motoneurons that have eventually adopted new motor units. This article intends to be a review of the literature of termino-lateral neurorrhaphy.

Keywords: end-to-side neurorrhaphy, nerve regeneration, collateral sprouting, neuromuscular problems in sport.