Neurolytic block



The deliberate temporary degeneration of nerve fibers through the application of chemicals, heat or freezing, produces a block that may persist for weeks, months or indefinitely.

A neurolytic block is a form of nerve block involving the deliberate injury of a nerve by freezing or heating ("neurotomy") or the application of chemicals ("neurolysis").

These interventions cause degeneration of the nerve's fibers and temporary (a few months, usually) interference with the transmission of nerve signals. In these procedures, the thin protective layer around the nerve fiber, the basal lamina, is preserved so that, as a damaged fiber regrows, it travels within its basal lamina tube and connects with the correct loose end, and function may be restored. Surgical cutting of a nerve (neurectomy), severs these basal lamina tubes, and without them to channel the regrowing fibers to their lost connections, over time a painful neuroma or deafferentation pain may develop. This is why the neurolytic is usually preferred over the surgical block.

Frequently, the term neuroablation is used to also describe the physical interruption of pain either chemically, thermally, or surgically. All neurolytic techniques cause Wallerian degeneration of the nerve axon distal to the lesion.

Chemicals were extensively utilized in the past for neurolysis in the early 20 century.

The first report of chemical neurolysis was made in 1863 by Luton who delivered irritant chemicals subcutaneously in patients with sciatica, offering them significant alleviation of pain. [Luton A, generales de medecin, 1863] The advent of newer and safer modalities have been introduced into pain practice including radiofrequency ablation (RFA), cryoablation, and neurosurgical procedures.

The advancements in imaging modalities such as fluoroscopy have improved the precision and efficiency of targeted neurolysis ¹⁾.

1)

D'Souza RS, Hooten WM. Neurolytic Blocks. 2018 Dec 28. StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2018 Jan-. Available from http://www.ncbi.nlm.nih.gov/books/NBK537360/

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