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NEUROPHYSIOLOGICAL GUIDANCE IN INFILTRATIVE THERAPY FOR PUDENDAL NEURALGIA.

Hypothesis / aims of study

Usually due to a compression of the Pudendal Nerve (PN), either on the level of the muscle piriformis, or on the inter-sacro-spino-tuberal ligaments, or into the fascias of the muscle obturatorius internus (Alcock's canal), Pudendal neuralgia constitutes the major cause of chronic perineal pain.

Generally is treated by injection of anaesthetics and corticostheroids or surgical decompression using CT guide or fluoroscopy in perineal or gluteal way.

As a matter of fact chronic perineal pain is difficult to evaluate as many clinician fail to identify a clear etiology, often considering the pain essential or of psychosomatic origin.

Furthermore image-guided pudendal nerve block is used as the most important diagnostic test following history and physical examination in suspected pudendal neuralgia.

Starting from the concept that the ideal would be the ability to deliver precisely to the target nerve exactly the right dose of local anaesthetic without incurring any risk of damage to the nerve or its related structures, we developed a new method for infiltrative therapy in diagnosed pudendal neuralgia.

In our study we aim to verify the feasibility of a new method to deliver infiltrative therapy in pudendal neuralgia, by means of neurophysiological guidance.

Study design, materials and methods

28 pts, 16 female and 12 male, 57 yrs mean age (27-80) with neurophysiological diagnosis of pudendal neuralgia were addressed to infiltrative therapy of PN.

Mean duration of pain was 19 months before a neurophysiological diagnosis; other sacral area dysfunction was constipation in 8, erectile dysfunction in 5, voiding dysfunction in 3, bladder over-activity in 9. Pain site was unilateral in 19 pts, bilateral in 9 pts.

Etiology was post-traumatic in 4 pts, iatrogenic post-surgical in 15 pts (pelvic 5, rectal 7, spinal 3) and post-radiotherapy in 2 pts, idiopathic in 7 pts.

In 23 pts the posterior (fig.1) while in 5 pts the perineal (fig.2) approach was the route followed for drug delivery. An intrarectal stimulation with St. Mark Hospital electrode before the infiltration allowed to record via an EMG needle inserted on EAS the PN Terminal Motor Latency (PNTML) which is used as referencial trace (RT). (fig.3)

Then to an insulated needle inserted in perineal approach perpendicular to the skin for about 4 cm to reach the ischial tuberosity and tilted laterally and dorsally to reach the recto-ischial fossa until it is located below and behind the ischial spine in Alcock's canal, or in posterior approach, as previously described by Schmidt (2), an electrical stimulation is applied and a continuous monitoring of PNTML is recorded and compared with RT until the position of the needle is adjust to obtain a PNTML that reproduce the RPT.

Finally the drug is delivered: the first infiltration consists of 5 mL 1% of ropivacaina and 1ml of long release glucocorticoid; for further infiltrations increasing dose of 1 ml of glucocorticoids is added to the anesthetic.

Results

After 2 infiltrations a complete relief of pain was obtained in 8 pts; an improvement of 50% in 15 pts us lead to perform other injections. 5 pts in whom there was not any effect on pudendal neuralgia were addressed to a different therapy.

Interpretation of results

We normally perform neurophysiological evaluation of sacral area (EMG of perineal and sphincter muscles, PNTML e sensory conduction, sacral reflexes, spinal and cortical somatosensory evoked potentials) to define the site (where is the anatomical entrapment), the degree and the type of lesion (myelinic, axonal, mixed, acute chronic) and to make differential diagnosis with lumbosacral radicular impairment (L4-L5 and/or L5-S1). This allows us to select pts on the basis of a specific diagnostic tool for a neurogenic situation.

Moreover we use neurophysiological evaluation as intraoperative monitoring in sacral and perineal area to guide for implant of electrostimulation and neuromodulation devices to the Pudendal nerve. Our specific nerve location technique using either perineal or posterior approach allows a close approach, without the risk of nerve damage, as recently has been verified.

Concluding message

Neurophysiological guidance to infiltrative therapy in pudendal neuralgia is feasible either in perineal or posterior approach; the precision of diagnosis and accurateness of method suggests our technique as promising tool in the therapeutic algorithm of chronic perineal pain in pudendal neuralgia.

fig.1 posterior way

fig.2 perineal way

fig.3 neurophysiological guidance

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