Anesthetic Pain Management in Siriraj Hospital : A Retrospective Review

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Abstract

Neural blockade has been used as the single method to anesthetize a part of the body or used in combination with general anesthesia to lessen perioperative pain. Currently, nerve blocks are used for diagnostic, prognostic, therapeutic and prophylactic proposes for management of chronic, acute and cancer pain in a Pain Clinic. Reviewing the records of the 3,349 patients at Siriraj Pain Clinic, we found 2,662 and 687 cases had chronic and acute pain problems respectively, and only 646 patients were treated with anesthetic interventions during 1990 to 1998. They consisted of 317 male and 329 female. The techniques included stellate ganglion block, paravertebral nerve block, celiac plexus block, hypogastric plexus block, mesenteric plexus block, sacral nerve block, epidural steroid, lumbar sympathectomy, first and second thoracic sympatholysis, facet joints injection, sacroiliac joint injection, intravenous regional block with guanethidine or ketanserin, continuous opioid infusion, intravenous lidocaine infusion, and a phentolamine test. The common problems of pain included brachial plexus injury, chronic spinal pain, herpetic neuralgia, ischemic pain, central post-stroke pain, and causalgia. This retrospective review showed that 38 per cent of them reported 50 per cent pain relief with temporary effect. 34 per cent experienced good and satisfactory pain relief while 9 per cent reported excellent pain relief. 17 per cent did not gain benefit from any technique of pain relief and about 2 per cent could not be evaluated due to they did not return for follow-up. One serious complication after thoracic sympatholysis was brachial plexus injury. The neural blockade is proven to be one of the useful adjunct in the management of chronic pain but the selection of the technique is subjected to its critical appraisal.

Key word : Chronic Pain, Neural Blockade

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Initially, the technique of neural blockade was used alone to anesthetize a part of the body or used in combination with general anesthesia to lessen pain from surgical procedure intraoperatively. Currently, nerve blocks are also used for diagnostic, prognostic, therapeutic and prophylactic purposes to treat chronic, acute and cancer pain in the Pain Clinic. According to the 3,349 patient records reviewed, 2,662 and 687 cases had chronic and acute pain problems respectively; only 646 patients were treated with anesthetic interventions during 1990 to 1998. Three hundred seventeen were male, and three hundred twenty nine were female patients. This retrospective review aims to study the benefit and roles of neural blockade as part of multi-modality pain therapy.

Neural blockade refers to a technique that uses needles, catheters, and infusion devices to deliver medications in close proximity to peripheral nerves, plexuses, nerve roots, ganglia or directly into spinal fluid[1,2]. In order to make the method most beneficial, needles or catheters must target specific anatomic locations, but the targeting can be imprecise even in the most skillful hands. The presence or absence of sensory anesthesia following the instillation of an appropriate dose of local anesthetic is a helpful method to assess the ability of the technique to target the painful area. The neural blockade used for pain control in the Pain Clinic can be different from the blocks performed in the operating theater. If a needle localization is precised, large volumes of local anesthetic can be circumvented. Therefore hemodynamic instability may not occur. But for pain patient, precise localization of the needle may be needed because much smaller volumes of local anesthetic agent are often used. And if a neurolytic agent is placed, there is an even greater premium on limited solution to be used and distributed. For celiac plexus neurolysis, confirmation of needle localization by C-armed fluoroscopy is mandatory.

Neural blockade can be used for diagnostic and therapeutic purposes. About 31.9 per cent of the neural blockades in the clinic were for diagnosis, 60.7 per cent were for therapy and 7.4 per cent were for both (Table 1). Diagnostic blocks are done with reversible agents of known duration, such as local anesthetics. Ideal responses are more than 70 per cent of pain relief at all of the correlate site, extent and duration. Often they differentiate psychosocial factors by eliminating the biological part of pain. But pitfalls and problems in the technique sometimes lead to incorrect diagnosis and adverse effects. Therapeutic blocks, on the other hand, are performed with either the mixture of local anesthetic agent and steroid, or with the neurolytic agents, such as phenol, and alcohol. Agents used for neural blocks reviewed are shown in Table 2.

The choice of a specific diagnostic or therapeutic nerve block often depends on the type of pain and the region involved. Nociceptive pain is caused by noxious stimuli arising from bone, tissues, or vis-

Table 1. Therapeutic purposes of anesthetic procedure.

Anesthetic procedure	Diagnostic block	Therapeutic block
Stellate ganglion block	162	168
Paravertebral nerve block	133	66
Celiac plexus block	0	172
Central block	23	128
Intravenous regional guanethidine/ketanserin block	0	92
Phentolamine test	61	0
Sacral nerve block	13	19
Lumbar sympathectomy	6	19
Intravenous lidocaine infusion	2	28
First thoracic sympatholysis	0	28
Facet joints injection	8	17
Second thoracic sympathectomy	0	16
Sacroiliac joint injection	5	8
Mesenteric plexus block	0	13
Continuous opioid infusion	0	12
Hypogastric plexus block	0	9

cera without any neural damage and responds well to neural interruption at peripheral or central level. The clinic patient records showed 57.5 per cent (372/646) neuropathic pain patient, 43.8 per cent (283/646) visceral pain and 21.7 per cent (140/646) nociceptive pain. The most common chronic non-malignant pain in our series was neuropathic pain. Etiologies of this pain are nerve injury, the complex regional pain syndrome (CRPS) type I or reflex sympathetic dystrophy (RSD), spinal pain, central pain, and herpetic neuralgia (Table 3). Peripheral nerve blocks often fail to relieve the deafferentation pain whereas autonomic sympathetic blocks are advocated as part of a multimodal therapy. There is little documentation of the long or short-term effectiveness of nerve blocks on neuropathic pain[3]. Pain relief varied considerably from a few hours to a few days, and in some patients, from weeks to months. Repeat blocks were effective in several patients and lasted one to four years.

The anesthetic interventions commonly employed are stellate ganglion block, thoracic paravertebral block, celiac plexus block, epidural steroid injection, intravenous regional guanethidine block, lumbar sympathetic block, sacral nerve blocks, and intravenous lidocaine infusion. Procedures were pro-

Table 2. Types of the agents used for anesthetic procedures.

Anesthetic procedures	Local anesthetic agent	Mixture of local anesthetic agent and steroid	Opioid	Local anesthetic agent + opioid	Neurolytic agent
Stellate ganglion block	335	4	-	-	-
Paravertebral block	141	50	-	3	2
Sacral nerve block	23	8	-	-	-
Caudal block	13	2	-	2	-
Celiac plexus block	5	-	-	-	166
First thoracic sympatholysis	3	-	-	-	25
Lumbar sympathectomy	12	-	-	-	19
Second thoracic sympatholysis	1	-	-	-	15
Mesenteric plexus block	1	-	-	-	12
Hypogastric plexus block	-	-	-	-	9
Epidural block	8	-	4	-	2
Epidural Steroid	3	97	-	-	-
Facet joints injection	6	19	-	-	-
Sacroiliac joint injection	8	7	-	-	-
Cervical epidural	-	6	-	-	-
Continuous epidural	4	-	10	1	-
Continuous opioid infusion	-	-	12	-	-

Table 3. Diagnosis of chronic non-malignant pain.

Diagnosis	No. of Patients
Nerve Injury	153
Spinal pain	60
Herpetic neuralgia	34
Central pain	14
Musculoskeletal pain	13
Post-amputation pain	12
Ischemic pain	10
Reflex sympathetic dystrophy	9
Polyneuropathy	2
Perianal pain	2

Table 4. Diagnosis of cancer pain.

Diagnosis	No. of patients
Liver cancer	94
Pancreatic cancer	58
Gynecologic cancer	41
Lung cancer	21
Colonic cancer	21
Rectal cancer	19
Stomach cancer	19
Head & neck cancer	18
Breast cancer	11
Esophageal cancer	5
Kidney & bladder cancer	5
Others	18

vided on average 2.7 times in each case. The common diagnostic blocks performed were stellate ganglion block (309/340 cases) and thoracic paravertebral block.

Diagnosis of cancer pain is shown in Table 4. The most common procedure employed for chronic cancer pain was celiac plexus block (Table 5).

The common procedures employed for chronic spinal pain were epidural steroid, facet joints injection and sarcoiliac (SI) joint injection. Epidural steroid injections of corticosteroids with local anesthetics are commonly used and widely accepted to treat radiculopathy associated with herniated nucleus pulposus, for pain associated with nerve root compression. Corticosteroids injected blindly into the epidural space may not reach the affected neural structures in a substantial proportion of patients, especially those who have had previous surgery. This might be the cause of variation in responsiveness in particular cases[4].

For the sympatholysis series, one hundred and sixty-six patients underwent chemical neurolysis of celiac plexus, twelve were mesenteric and nine were hypogastric plexus. All of them were for therapeutic purposes of upper abdominal pain of cancer in origin. Eighty per cent of them responded well. None had severe complications. Sympathetic blocks also can provide temporary and sometimes long-term relief for patients with and without CRPS type I (CRPS-1)[5-7]. Twenty-five cases underwent inferior cervical sympathetic ganglion neurolysis (First thoracic sympatholysis), fifteen patients had upper thoracic (Second thoracic sympatholysis), and nineteen cases had lumbar sympathetomy. All of them were chemical sympatholysis.

Neurolytic blocks present some major concerns and are often safe for the terminal cancer pain patients[6-8]. There is considerable risk of causing damage to adjacent tissue. For neuropathic pain, there is a risk of causing further nerve damage and increased pain. Neural blocks would exacerbate rather than decrease neuropathic pain of central in origin and denervation though sympathetic nerve blocks, sometimes relieved pain[5]. In this series, 8 patients (28%) with brachial plexus injury and 7 patients (24%) with causalgia of upper extremity benefited from chemical neurolysis of the first and second thoracic sympathetic ganglion. These techniques were undergone after positive phentolamine tests[9].

Modification of the Bier block to isolate the treated limb by tourniquet, while drugs like guanethidine or ketanserin were applied intravenously at corresponding sites, was also used for pain from the reflex sympathetic dystrophy[10-12]. 88 patients were treated with intravenous regional guanethidine and 4 had ketanserin blocks. Four blocks were performed in each patient twice a week. Pain treatment in this pain clinic also included other pharmacokinetic studies such as the phentolamine test, the intravenous lidocaine infusion[13-15] and the continuous subcutaneous infusion to optimize analgesic therapy (Table 6).

To evaluate the benefits of the technique, visual analogue score (VAS) was applied 5 times:

Table 5. Neural blockade used for chronic and cancer pain.

Neural blockade	Chronic pain	Cancer pain	Total
Stellate ganglion block	309	31	340
Paravertebral nerve block	63	136	199
Celiac plexus block	6	166	172
Spinal blockade	115	22	137
Intravenous regional guanethidine/ketanserin block	90	2	92
Intravenous phentolamine test	60	1	61
Sacral nerve block	5	27	32
Lumbar sympathetic block	28	3	31
Intravenous lidocaine infusion	26	4	30
First thoracic sympatholysis	15	13	28
Facet joints injection	25	0	25
Second thoracic sympatholysis	16	0	16
Sacroiliac joint injection	15	0	15
Mesenteric plexus block	0	13	13
Hypogastric plexus blockade	1	8	9
Continuous opioid infusion	0	12	12

Table 6. Utilization of anesthetic procedures for various etiologies of pain.

Anesthetic procedure	Neuropathic	Nociceptive	Visceral	Psychogenic
Stellate ganglion block	326	11	3	0
Paravertebral block	66	17	136	0
Celiac plexus block	0	0	172	0
Central blockade	84	59	19	47
Intravenous regional guanethidine/ketanserin block	92	0	0	0
Intravenous phentolamine test	61	0	0	0
Sacral nerve block	28	18	26	0
Lumbar sympathetomy	27	7	2	0
Intravenous lidocaine infusion	30	0	0	0
First thoracic sympatholysis	28	5	2	0
Facet joints injection	16	15	0	9
Second thoracic sympatholysis	16	0	0	0
Sacroiliac joint injection	10	9	0	5
Mesenteric plexus block	5	2	11	0
Continuous opioid infusion	6	11	11	0
Hypogastric plexus block	8	7	8	0

immediately, one week, one month, three and six months after blocks. Responses were divided into 4 categories.

1. Good response

The patient rated 80-90 per cent of pain relief immediately after a single block and there was complete and permanent relief thereafter.

2. Moderate response

The patient rated 60-80 per cent of pain relief but the benefit was temporary, however pain was significantly less severe. With this type of response repeated blocks provided permanent pain relief.

3. Fair response

The patient stated 30-59 per cent of pain relief or temporary pain relief after each treatment. But the benefit outlasted the effect of the agents used. However, subsequent series of blocks gave slow, gradual improvement until the patient was ultimately pain-free.

4. No response

The patient reported less than 30 per cent of pain relief to no improvement whatsoever after block. Benefit outlasted the effect of the agents used, though improved, the patient still had residual pain at the time of follow-up.

It is apparent that most of the cases (46.6%) reported about 50 per cent pain relief with temporary effect (fair response) (Table 7.). Only one-fourth (24.7%) experienced good and satisfactory pain relief (moderate response) and about 2.4 per cent reported good response. 26.3 per cent of the patients did not gain benefit from the anesthetic procedures (no response) and 70 cases (10.8%) were not evaluated as they were lost to follow-up. One serious complication after thoracic sympatholysis in brachial plexus injury was recorded in this series. Sudden respiratory collapse and cardiovascular arrest was found after blocks due to subarachnoid leakage of alcohol. Hypotension and local pain at injection site were commonly found in celiac plexus blocks series.

For many years, neural blockade has been used to help establish diagnosis and guide therapy in pain management[1,16-18], not only because of its ability to evaluate the painful area adequately but also for the potential for an immediate decrease in pain. For in-patients, who are expected to receive a therapeutic block with neurolytic agent, a diagnostic block with local anesthetic is mandatory to establish the dermatomal distribution of pain and concomitant side effects. Therefore, in all cases, a diagnostic block must be done prior to initiating the injection of more permanent neurolytic agents. The rationale is if a local anesthetic agent provides analgesia in the distribution of an anesthetized nerve or if pain relief follows a local anesthetic nerve block, then the pain generator must be distal to the site anesthetized. Thus pain relief with a diagnostic block should accurately predict the results of a neurolysis procedure. Many articles confirm that the results of this test must be interpreted with caution especially with chronic pain conditions

Table 7. The outcome of anesthetic pain management in the pain clinic.

Anesthetic procedure	Total cases	Results (No. of Cases)				Lost to follow-up
		Excellent	Good	Fair	No effect	
Stellate ganglion block	340	18	93	151	73	5
Paravertebral block	199	23	78	74	21	3
Celiac plexus block	172	29	80	51	11	1
Phentolamine test	61	3	16	21	21	-
Intravenous regional guanethidine/ ketanserin block	88	-	24	33	29	2
	4	-	1	1	2	-
First thoracic sympathetic neurolysis	28	8	11	7	2	-
Second thoracic sympathetic neurolysis	16	2	6	4	2	2
Intravenous lidocaine infusion	30	4	9	10	6	1
Lumbar sympathetic block	31	-	9	15	6	1
Mesenteric plexus block	13	3	7	2	1	-
Hypogastric plexus block	10	-	5	5	-	-
Facets block	25	2	10	10	2	1
Sacroiliac joint injection	14	-	5	5	2	2
Sacral nerve block	32	3	6	16	7	-
Epidural steroid	99	6	32	43	14	4
Epidural block	15	2	9	2	2	-
Continuous epidural block	17	4	10	3	-	-
Caudal block	17	2	2	10	3	-
Cervical epidural block	6	1	-	1	4	-

because the test is subjective in nature[5,19-21], results can be false positive or negative. Avoidance of systemic effects of local anesthetic drugs and placebo responses may not be possible. However when appropriately interpreted, these tests may provide valuable insight into the management of pain.

In the past decades, there was a misconcept that neural blockade is the main modality to localize and treat pain. Logically the duration of pain relief should depend on the type of solution used for injection. However, the duration of benefit can last for months, which may not be explained by the pharmacological effects of the agents used. On the other hand, when a long-lasting effect is expected from the neurolytic agent used, the duration of its action may be shorter than expected.

At present, neural blockade seems to be only of minor importance for chronic cancer pain because their use has been steadily decreasing while pharmacological pain control and the novel routes of drug administration have gained wider acceptance [22,23]. The two kinds of procedure reviewed here, are celiac plexus neurolysis and thoracic paravertebral blocks. These procedures seem to be highly effective and tend to give rise to only minor complications in selected cases. Careful patient selection is of the utmost importance in performing these blocks. The other neurolytic blocks have been shown to have only local and temporary efficacy. Most of them are inaccurate, and are often accompanied by severe complications. Thus only experts or skilled anesthesiologists should perform the techniques. Such problems are the cause of more medico-legal confrontation. Therefore these procedures usually are scheduled only after weighing risk *versus* benefit carefully. In an equipped pain clinic setting, the neurolytic block is replaced by radiofrequency thermocoagulation, or to a lesser degree, by cryoanalgesia. These two procedures normally yield no better analgesia and are impractical for a developing country.

For nerve blocks to be beneficial, appropriate selection of patients is of paramount importance. The criteria for selection of nerve blocks depend on the presence of localized, highly selective pain pathway, unresponsiveness to pharmacological pain control and oncologic or specific therapy, absence of coagulopathy, and absence of tumor at the site of injection. These techniques are often contraindicated in multiple sites of pain due to an uncertain result. With diagnostic nerve block, evidence of an existing neural blockade must be demonstrated before reaching a conclusion as to its efficacy. If a somatic nerve block is being performed, the sign of decreased response to pinprick sensation should be demonstrated along the dermatomal distribution before reaching a conclusion.

Physicians' concepts towards managing pain with anesthetic intervention should be corrected. Neural blockade is not the sole method of treating pain; its role is mainly a component of a coordinate treatment program producing a prolonged, partial pain relief allows the patient to participate in other active therapies. For cancer patients, who may have months to years of survival, it is extremely vital that the referring physician and anesthesiologist use nerve blocks as a part of a multimodalities approach to the pharmacological management of pain.

SUMMARY

The successful utilization of anesthetic methods for pain relief needs an understanding of the causes and the bio-psychosocial nature of pain. Chronic pain states are always complex in nature. The general principle for the management of chronic pain is a multimodal approach. The roles of neural blockade may be assumed dominant and beneficial in the management of acute pain problems but not for chronic pain. In this review, regional analgesic techniques were used in the pain clinic for 24.2 per cent (646/3,349) of chronic pain patients. The techniques were employed in conjunction with multimodality therapy including pharmacological and specific management strategies for disability and psychological dysfunction, as useful adjuncts in the management of pain. The use and timing of each technique should be appropriate to the cognitive and functional need of each patient. It is crucial that therapeutic modalities should be considered in step-ladder pattern and not create any new functional deficit or new pain. Prerequisites to the use of anesthetic interventions are that they be strictly accepted and understood by the patients. Patient and family should be allowed to participate in decision-making and management. Individual treatment and critical appraisal of the neural blockade chosen for pain relief is necessary.

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REFERENCES

1. Hogan Q, Abram S. Neural blockade for diagnosis and prognosis: A review. Anesthesiology 1997; 86: 216-41.
2. Clark F, Gilbert HC. Regional analgesia in the intensive care unit. Crit Care Clin 2001; 17: 943-66.
3. Arner S, Lindblom U, Meyerson BA, Molandder C. Prolonged relief of neuralgia after regional anesthetic blocks. A call for further experimental and systematic clinical studies. Pain 1990; 43: 287-97.
4. Breivik H, Hesla PE, Molnar I, Lind B. Treatment of chronic low back pain and sciatica: Comparison of caudal epidurals injections of bupivacaine and methyl prednisolone with bupivacaine followed by saline. In: Bonica JJ, Albe-Fessard D, eds. Advances in pain research and therapy, vol 1, New York: Raven Press, 1976: 927-32.
5. McQuay HJ, Moore RA. Local anesthetics and epidural. In: Wall PD, Melzack R, eds. Textbook of pain, 4th ed. Edinburgh: Churchill Livingstone, 1999: 1215-32.
6. Munglani R, Hill RG. Other drugs including sympathetic blockers. In : Wall PD, Melzack R, eds. Textbook of pain, 4th ed. 1999, Edinburgh: Churchill Livingstone, 1233-50.
7. Aeschbach A, Mekhail NA. Common nerve block in chronic pain management. Anesthesiol Clin North Am 2000; 18: 429-59.
8. Hogan Q, Haddox JD, Abram S, et al. Epidural opiates and local anesthetics for the management of cancer pain. Pain 1991; 46: 271-9.
9. Arner S. Intravenous phentolamine test: Diagnostic, prognostic use in reflex sympathetic dystrophy. Pain 1991; 46: 17-22.
10. Hannington-Kiff JG. Relief of Sudeck 's atrophy by regional intravenous guanethidine. Lancet 1977; 1: 1132-3.
11. Hannington-Kiff JG. Sympathetic nerve blocks in painful limb disorders. In: Wall PD, Melzack R, eds. Textbook of pain, 3rd ed. Edinburgh: Churchill Livingstone, 1994: 1035-52.
12. Hanna MH, Peat SJ. Ketanserin in reflex sympathetic dystrophy: A controlled randomized double blind cross over study. Clin Pain 1989; 5: 205-9.
13. Edwards WT, Habib F, Burney RG, Begin G, Intravenous lidocaine in the management of various chronic pain states. Reg Anesth 1985; 10: 1-6.
14. Kastrup J, Peterson P, Dejgard A, et al. Intravenous lidocaine infusion-a new treatment for chronic painful diabetic neuropathy? Pain 1987; 28: 69-75.
15. Marchettini P, Lacerenza M, Marangoni C, et al.

Lidocaine test in neuralgia. Pain 1992; 48: 377-82.
16. Hogan QA. Reexamination of anatomy in regional anaesthesia. In: Brown D, ed. Regional anaesthesia. Philadelphia: WB Saunders, 1996: 50-83.
17. Cousin MJ, Bridenbaugh PO. Neural blockade. Philadelphia: Lippincott-Raven, 1998.
18. Gupta KJ, Parr MJA, Nolan JP. General introduction on trauma, pain management and regional anesthesia in trauma. In : Rosenberg AD, Grande CM, Bernstein RL, eds. Pain management and regional anesthesia in trauma. Philadelphia: WB Saunders, 1999: 3-28.
19. De Andres J, Valia JC, Gil A, Bolinches R, Predictors of patient satisfaction with regional anesthesia. Reg Anesth 1995; 20: 498-505.
20. Melzack R, Wall PD. Pain mechanisms: A new theory. Science 1965; 150: 971-9.
21. Woolf CJ. Central mechanisms of acute pain. In: Bond MR, Charlton JE, Woolf CJ, eds. Proceedings of the VIth World Congress on Pain. Amsterdam: Elsevier, 1991: 25-34.
22. Justin DM. Basic principles of chronic pain management. In : Campbell JN, ed. Pain-1996 An updated review. Seattle: IASP Press, 1996: 255-67.
23. Dellemijn PLI, Fields HL, Allen RR, et al. The interpretation of pain relief and sensory changes following sympathetic blockade. Brain 1994; 117: 1475-87.

การระงับปวดเรื้อรังด้วยวิธีสกัดสัญญาณประสาท ณ โรงพยาบาลศิริราช

พงศ์ภารดี เจาฑะเกษตริน, พ.บ., เพ็ญแข เกตุมาน, พ.บ.**

ในระยะแรกการสกัดสัญญาณประสาทเป็นเทคนิคที่ใช้แต่เพียงอย่างเดียวหรือบางครั้งก็ใช้ร่วมกับการให้ยาสลบเพื่อระงับความรู้สึกในระหว่างผ่าตัด ต่อมาเทคนิคนี้ได้ถูกนำมาใช้เพื่อระงับความปวดแก่ผู้ป่วยปวดเฉียบพลัน ปวดเรื้อรังและปวดเนื่องจากมะเร็งในคลินิกระงับปวด ได้ทำการศึกษาย้อนหลังจากข้อมูลผู้ป่วย 3,349 ราย ระหว่างปี พ.ศ. 2533–2541 มีผู้ป่วยปวดเรื้อรัง 2,662 ราย ปวดเฉียบพลัน 687 ราย ได้ทำการสกัดสัญญาณประสาทให้แก่ผู้ป่วยปวดเรื้อรัง จำนวน 646 ราย เป็นชาย 317 ราย หญิง 329 ราย โดยเทคนิค stellate ganglion block, paravertebral nerve block, celiac plexus block, hypogastric plexus block, mesenteric plexus block, sacral nerve block, epidural steroid, lumbar sympathectomy, first and second thoracic sympatholysis, facet joints injection, sacroiliac joint injection, intravenous regional block ด้วย guanethidine หรือ ketanserin, continuous opioid infusion, intravenous lidocaine infusion และ phentolamine test สำหรับการวินิจฉัยอาการปวดที่พบบ่อยในคลินิกได้แก่ การบาดเจ็บของ brachial plexus, ปวดหลังเรื้อรัง, ปลายประสาทอักเสบภายหลังจากเป็นงูสวัด (herpetic neuralgia) อาการปวดเนื่องจากขาดเลือดไปเลี้ยง (ischemic) อาการปวดเนื่องจากโรคทางสมอง (central post-stroke pain) และกลุ่มอาการปวดแสบเรื้อรัง (causalgia) ร้อยละ 38 ของผู้ป่วยมีอาการปวดลดลงประมาณครึ่งหนึ่งซึ่งผลดีนี้เป็นอยู่เพียงชั่วคราว ร้อยละ 34 ของผู้ป่วยได้ผลดี และร้อยละ 9 ได้ผลดีมาก มีเพียงร้อยละ 17 ของผู้ป่วยที่ไม่ได้ผลระงับปวดที่พึงพอใจและร้อยละ 2 ไม่สามารถติดตามประเมินผลได้ มีรายงานผลแทรกซ้อนรุนแรงภายหลังการทำ thoracic sympatholysis 1 ราย แม้ว่าวิธีการรักษาอาการปวดด้วยการสกัดสัญญาณประสาทเป็นหนึ่งในวิธีการที่ช่วยระงับและบรรเทาอาการปวดได้ แต่ควรพิจารณาเลือกวิธีนี้ เมื่อมีข้อบ่งชี้อย่างเหมาะสมเท่านั้น

คำสำคัญ : ปวดเรื้อรัง, การสกัดสัญญาณประสาท

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