

## HOW TO SET UP A PAIN CLINIC AND PRACTICE AS A PAIN MANAGEMENT SPECIALIST

Dr. Lakshmi Vas

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### Introduction

“Pain is a more terrible lord of mankind than even death itself” said nobel laureate Albert Schweizer in 1931. This forms the opening sentence of the classic text book “Bonica’s management of pain” published in 1953. Today as then, proper management of pain remains one of the most important and pressing responsibilities of the society in general, the medical institutions and personnel in particular. How seriously is this responsibility understood and implemented is a reflection of the quality, sensitivity, accountability and of course the economic capability of that particular society. Specialist pain clinics are the norm in developed countries with cutting edge of technology, dedicated specialists and state of the art facilities.

Pain is as major a problem in our country as anywhere else but the lack of a formal treatment strategy has been major lacuna in health care our country. Statistics from advanced countries show that 15-20% of population have acute pain (medical & surgical emergencies, postoperative pain, after accidents and injuries) and 25-30% of all population have chronic pain (as in chronic backache, cancer pain, migraines, arthritis, neuropathic pain etc).

Because it impairs the ability to work and have a productive life, pain has serious economic and social consequences. For example half to two third of all chronic pain sufferers are totally or partially disabled for days (headache, migraine), weeks or months (those with CRPS) and some permanently (like low backache, cancer pain and arthritis).

“For all the happiness man can gain is not in pleasure but in rest from pain”-John Dryden 1631-1700.

The human mind is a marvel of nature in that it has the resilience to return to normalcy even after experiencing a severe excruciating pain once it is over. Like a woman forgetting the throes of labour or a man after a bout of ureteric colic that expels the stone, the pain can be forgotten if it is for a limited time. But chronic pain is a different phenomenon altogether as it denies the sufferer the luxury of forgetfulness.

“Pain is not just a symptom demanding our compassion; it can be an aggressive disease that damages the nervous system - Gary Bennett,

Chronic pain is an enigma that may occur without any apparent injury or reason and serves no discernible purpose. As we are just now discovering, the various mechanisms of this protective mechanism gone haywire as in neuropathic pain, complex regional syndromes and cancer pain which invariably acquires neuropathic features which make it unbearable. A general classification of pain is into cancer pain and chronic non malignant pain syndromes.

Chronic pain results from many causes, may vary in its intensity from mild to severe but the most invariable feature is its relentless constancy. Chronic *mild pain* may erode the reserves of capability, to work, relax or for recreation altering the quality of life. *Moderate pain* may make work impossible, recreation unthinkable fostering a feeling that pain has been, is and will always be the dominant feature of life. Chronic *severe pain* strips the person of all tolerance and dignity, making death a welcome release.

All these degrees of pain exist in our society too, not just in patients of terminal cancer but in those with backache, failed back syndrome, neuralgias (postherpetic, trigeminal occipital to name a few) neuropathies (diabetic, malnutrition, drug induced etc) RSDs and myriad others.

Medical education is oriented towards a logical cause and effect for diseases. Acute pain usually has an organic cause and as such is eminently amenable to traditional treatment. Unfortunately this approach fails.

When confronted with the enigma of chronic pain whose ramifications on the body and mind are just being unraveled. The patients get referred to different specialist in a vain attempt to get a diagnosis With baffling absence of treatable organic causes. Ultimately the general conclusion is that “it is all in their head”. The patients start doubting their own veracity, get confused, depressed but cannot ignore the distress. They have the alternatives of continuing to suffer, seeking alternative forms of medicine or wandering from specialist to specialist in an attempt to find the ‘right doctor’, somebody who will acknowledge the gravity of their problem and offer a treatment option.

M.D., Pain Specialist  
Ashirvad Pain Relief Clinic  
Plot No., 117, Shubh Ashirvad, Hindu Colony,  
5th Road, Dadar (E), Mumbai - 400 014  
E-mail : Lakshmi1@hotmail.com

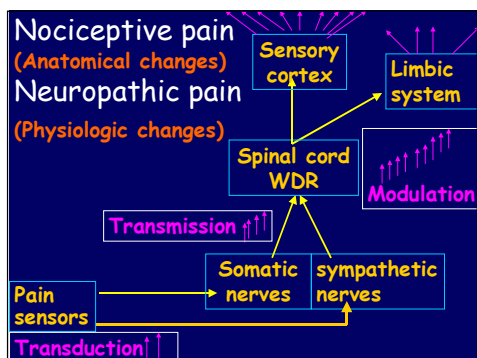


Fig. 1 : Evolution of neuropathic pain from nociceptive pain

A pain clinic is the place of convergence for all these patients irrespective of the aetiology of pain, medical, surgical, orthopaedic, traumatic oncological or whatever. The only criterion is that he/she should complain of having pain.

**The conditions treated in a pain clinic**

Cancer pain; Cancer affects practically every organ in the body and the treatment is as varied as the cancer itself.

**Chronic non malignant pain syndromes**

- 1) Back pain and radiculopathy,
- 2) Acute herpes zoster and post herpetic pain
- 3) Neuralgias; trigeminal, occipital and various others
- 4) Painful peripheral neuropathy: diabetic, drug induced after chemotherapy and Anti tubercular treatment etc
- 5) Facial pains,
- 6) Headaches, migraine
- 7) Central pain syndromes (deafferentation pain) of stroke, Phantom limb pain and post amputation stump pain
- 8) Chronic pelvic pain particularly in women
- 9) Myofascial pain syndromes, fibromyalgias.
- 10) Unusual pain conditions like HIV, paediatric and geriatric age groups.

The advances and sophistication in imaging, nerve location and in pharmacology in the last decade has ushered in the shifting paradigms like evidence based practice, and revolutionary advances in pain treatment. The recent explosive advances in pain management have pain relief a

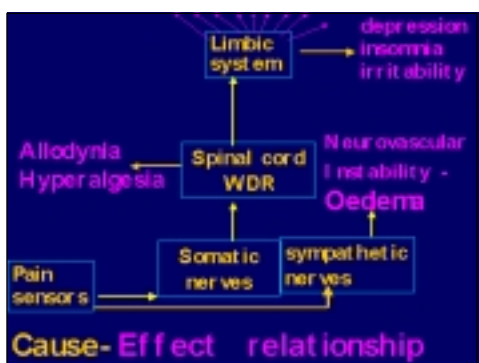


Fig. 2 : Evolution of the manifestations of neuropathic pain

reality rather than an aim. The emphasis is on accuracy by abandoning the older blind techniques of nerve localization. Enhancing the expertise of an anesthesiologist is the mandatory use of imaging, use of radioopaque dyes for exact localization and the use of electrical and ultrasound guided nerve locator. Use of continuous plexus and nerve blocks to replace the repetitive intermittent blocks addresses the windup mechanics of chronic pain. Utilization of radiofrequency ablations, intrathecal drug delivery and spinal cord stimulators have made it possible for total alleviation of pain without the mutilation of nerve damage from neurolytic blocks of vital nerves, ganglia and central neuraxis.

**The modern pain relief clinic**

The most significant advance of a modern pain clinic is the multidisciplinary approach to the management of pain to achieve the ultimate goal of pain relief and restoration of work productivity to the patient. To this end the services of a physical therapist are judiciously utilized to augment the result of pain relief achieved by nerve blocks medication and other modalities. A clinical psychologist helps to assess the expectations of the patient vis- a-vis the planned treatment, to teach coping strategies. To patients and treat the concurrent psychological problems.

The other advances which have made pain management a new specialty are

1. The most noticeable change has been the emergence of a new breed of specialists called the *interventional pain specialists* who rely on evidence based practice with modern techniques for precision in locating the cause of pain and its treatment.
2. The extensive mandatory use of fluoroscopy for pinpoint accuracy of the nerve blocks so that the patient does not suffer from indiscriminate destruction of nerves as may happen with blind techniques.
3. To ensure accuracy, nonionic radioopaque dye is injected under fluoroscopy to ensure that the injection is going where it is supposed to go.
4. Identifying the exact location of the nerve inflammation and then inject the ultimate anti-inflammatory agents like steroids to the exact site of pain is the mainstay of present day injection therapy. The steroid is triamcinolone or depomedrol has a slow release formulation which sustains the anti-inflammatory effect for 2 to 3 months to ensure that the nerve heals over that time.
5. Use of a safer technique like radiofrequency for denervation instead of neurolytic agents like phenol

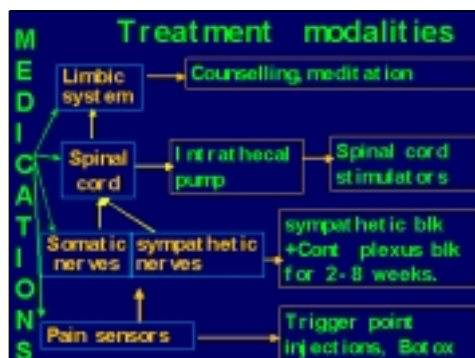
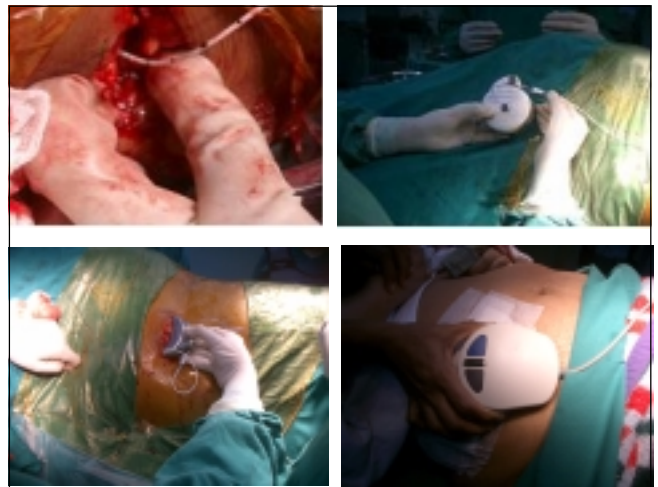


Fig. 3 : Treatment modalities and the intended targets for treatment

and alcohol which can give rise to neuropathic pain by themselves.

6. Use of implants like spinal cord stimulators for treating the pain of chronic backache, refractory angina, failed back surgery etc has revolutionized the lives of sufferers, enabling them to have a normal productive life
7. Use of intrathecal pumps for other types of chronic pain and cancer pain makes life livable to these unfortunate patients and adds a quality hitherto impossible. Spinal cord is the final common pathway for all pains below the head. A catheter is placed inside the intrathecal space, tunneled subcutaneously to a pouch in the front of abdomen, connected to the pump which is then placed in this pouch (figs. 3-6). Preservative free bupivacaine, morphine, baclofen, midazolam and clonidine can be used for injection through the catheter from the pump. Since the drug goes very close to the spinal cord very small doses can control pain (eg. just 1 mg can control a pain which was severe even with 100 mg of morphine tablets). The doses are so small that side effects like nausea, itching etc are minimal or nil. The level of pain relief is such that the person can resume most of his normal routine work. The pump needs refill once in 2-6 months. the refill is done through a special port (fig. 7) The intrathecal pump can provide this relief for upto 5-7 years after which it requires a change of battery. In patients with a good life expectancy intrathecal delivery of drugs (local anaesthetic, morphine, ketamine, clonidine etc) is the most accepted treatment worldwide for conditions like cancer, failed back syndrome, deafferentation pains etc. It is particularly useful for many of the diffuse, widespread and visceral pains of cancer (from internal organs) particularly where nerve blocks are likely to be only temporarily successful. It provides highly selective analgesia without any sensory



Figs. 3-6 : Intrathecal catheter connected to the pump that is implanted into a subcutaneous pouch. Later dose adjustments through a radiofrequency head

motor or sympathetic effects and can be easily adapted for home administration. The only limitation for our country is the cost which is high. In patients with limited life expectancy the catheter can be placed in the epidural space and connected to a subcutaneous port which in turn receives the medication from an external pump through an indwelling needle through the skin (fig. 8).

8. Use of procedures like discography pinpoints the intervertebral disc to be removed thereby avoiding failure of back surgery.
9. Development of needle procedures like IDET and Nucleoplasty to replace major invasive back surgery. This change is identical to the situation where angioplasty has replaced cardiac surgery in a select group of patients.

IDET (intra discal electrothermal annuloplasty) (for treatment discogenic backache without disc prolapse and MRI and discography proven annular tear).

Nucleoplasty (Coblation of the prolapsed intervertebral disc causing neurological pain. Presently for small prolapses).

Practice of pain management in India is fraught with many pitfalls, difficulties, frustrations and is at all times a challenge. The need to balance practical realities with the wish to maintain an academic approach makes the challenge a tight rope walk. But with all these limitations it is exhilarating in its very challenge, and is unparalleled for the intellectual stimulation of solving a pain problem that has remained refractory to treatment by multiple physicians of various other specialties.



Fig. 8 : An epidural port with an external pump

A discussion of the problems, both universal those which are peculiar to our country. the requisites for solving them and a brief resume' of the experience of 3 years of exclusive pain practice in the metropolis of Mumbai follows.

The universal problems : A major problem is of one specialist approaching a multifaceted problem. So acceptance and practice of a team approach has been shown to be the only way to manage the problem of pain. To establish a cohesive team where every member complements the strength of others is the first requisite. To achieve this the leader of the team will have to leave the personal ego aside, to be placatory, accept any set downs but at all times acknowledge the other's contributions. Personal touch and communication is the key in planning and execution, of the requirements of other departments with equal priority.

The strength of the anaesthesiologist lies in the following;

1. The obsession of the speciality with pain relief be it during surgery or post operative or chronic. Pain with all its intricate perplexities is familiar territory to anaesthesiologists.
2. Knowledge of pain pathways and the medications for relieving it make for a confident use of potent drugs like opioids a and b adrenergic blockers, ketamine (NMDA receptor blocker) etc.
3. The knowledge of expert resuscitation makes the use of these drugs safe in the hands of an anaesthesiologist.
4. Familiarity with neuraxial and peripheral nerve and plexus blocks and the various modalities like catheter placement tunneling etc.
5. When it comes to performing the surgery for placement of a intrathecal pump or a stimulator the observational familiarity with surgical techniques as a part of anaesthetizing makes it easy for the next step of performance of the surgery.

However the limitations of an anaesthesiologist are

1. The unfamiliarity with imaging techniques, the views and the orientation of anatomy vis-a-vis imaging.
2. The unfamiliarity with chronic pain conditions, their aetiology, the accepted treatment of the aetiology etc. Anaesthesiologists are practitioners of acute medicine. In the field of pain, they have to get used to giving medicines and waiting for hours or days for their action rather than seconds and minutes.
3. The sheer variety of the aetiologies of pain is mind boggling. The patient for the pain clinic can be from all the branches of medicine. The amount of continuing education for an effective understanding of these means a return to the days of residency of daily 18 hours of study.
4. Anaesthetists are used to being behind scenes. So the active interactions with an awake patients is a new experience. Insulation of one's own psyche from a continuous constant exposure to the misery of life inflicted by unremitting pain and yet remain confident enough to positively influence patients requires maturity, philosophy and spirituality. The intricacies of charging professional fees, and not to feel guilty to tax a patient at the end of his tether financially and otherwise are extremely difficult to learn. A detached but involved attitude towards the vagaries of pain management, its successes and failures is the only way to maintain equanimity and objectivity.

**Problems peculiar to our country** : are many and at times frustrating. They are:

1. Non availability of vital analgesics, their preservative free forms. For ex –Tablets of potent analgesics like oxycodone methadone are not available. Even morphine tablets are difficult to obtain and require considerable tenacity. Vital drugs like clonidine, guanethidine are not available. Even baclofen has to be imported at a high cost. And suddenly it may be unavailable. This can mean a fatality in patients of spasticity on high doses of intrathecal baclofen. So a contingency plan has to be ready. Antidepressants with low side effect profile like desipramine are not available. Neurolytic drugs like phenol, alcohol and glycerol are available in bulk form but not in a safe usable form. The medicolegalities of using these can be fearsome.

Preservative free injectable bupivacaine, albeit the lower concentration of 0.25% (Anawin 0.5% Ò Neon) ketamine and midazolam have been made available and are suitable for intrathecal use. Preservative free morphine has been available but there have been

problems while using it with implantable intrathecal pumps causing mechanical pump failure.

2. Beaureaucratic hurdles for procuring opioids, their licenses and transport licenses.

The short term expiry dates, and the official destruction of unused drugs make the procuring and the use of these drugs very cumbersome. There is always the Damocle's sword of the expiry date hanging over our heads. The purchase departments of hospitals are reluctant to take on these headaches. Communication with them to motivate them and win their cooperation is essential to pain practice in India.

3. Lackadaisical response from pharmaceutical industry- Most of the deficiencies detailed above stem from a pharmaceutical industry uninterested in this branch of medicine. Obviously the demand for these drugs is not high with the paucity of practicing pain specialists or in institutions. The industry either is not interested in these low profit items or has no initiative to be helpful to the new unestablished branch like pain medicine. However messrs Neon have been helpful in the past 2 years by introducing simple everyday use drugs like preservative free bupivacaine, midazolam and ketamine. Hopefully other drugs will follow suit in the not too distant future.

4. Lack of awareness among other consultants with pain as a new and different speciality: This is especially true of seemingly inexplicable entities like CRPS 1 and 2.

So a dynamic launch of awareness programs are necessary directed both at our colleagues and the general public. If the public were to be aware of the benefits to be had they would flock to a pain clinics. Unfortunately even doctors suffering from severe intractable pain are not aware that their pain can be alleviated and they need not "learn to live with it" This is indeed a pathetic state of affairs.

5. Lack of medical insurance: The insurance companies are not aware of most of these new procedures and lot of justification is required before they agree to pay for pain treatment procedures. This is particularly important in a chronic progressive degenerative condition like backache, and very unfortunate in cases like failed back surgery. The company refuses to pay up for a new manifestation of a degenerative problem simply because the patient had an back surgery for an acute PID many years ago even though he has been problem free when he started the insurance. The company is happy to accept the premiums for years from a symptom free individual but finance may not

be forthcoming for an essential procedure like an intrathecal pump or spinal cord stimulator because the patient had an old episode of backache.

**Problems of private practice :** In private practice the individual consultant has to deal with all the above problems at an individual level. This can be time consuming, frustrating to the extent of demoralization and more often than not unproductive effort. So unless the individual is driven to practice pain, or has an existing infrastructure or attachment to a hospital which will take over some of the work pain practice in India may be well nigh impossible. Even with the preceding attributes the pain specialist has to be oblivious to the word problem and treat is as just another challenge whose solution is just round the corner.

A major problem is that of finance. Pain practice is not high on remuneration. The patients have already exhausted their resources with various preceding treatments and they have no insurance to finance them. So the majority of patients cant pay for the expertise required for their treatment. The number of patients who can pay are few, and even if they can afford they or their relatives may feel that payment "just for treating pain and not the main disease" is not worthwhile. So most of them have to be subsidized at the expense of the consultant. The consultant who can earn a lot more from anaesthesia practice has to consider this aspect carefully.

Even more important there are many occasions when the physician recognizes the urgent need for pain relief in a patient who can afford nothing. In such a situation the doctor will have to contribute / borrow / beg on behalf of the patient for resources. Pain is one branch where it is impossible to remain impervious to a of a patient's suffering that is remediable. It is indeed a humbling experience to attempt to raise funds but in vain. The revelation is that money is not an easy commodity for most people/ institutions/ companies to part with. So it becomes the responsibility of the concerned physician to set up trusts/ funds for financing these unfortunate patients in the long run.

In short the new pain specialist in private practice has to spend a lot of time on all these problems, spend a lot more time on increase awareness among public and professional colleagues. Most important he has to take time out for continuing education on pain to be effective with his patients. While doing all this he/ she will earn nominally which may or may not be sufficient to sustain a lifestyle of a consultant physician. However these are the initial problems and once established the problems : reward ratio shifts in favour of rewards.

The requisites for solving these problems: are as follows.



The most mandatory prerequisite is continuing education as each new patient teaches a new aspect of his or her disease and to make sense of this constant reading is mandatory. Pain practice encompasses so many new horizons, unexplored territories and enigmas that have eluded understanding that only an extreme dedication, educating of oneself can make a successful pain specialist.

1. Obviously this is possible only if it is a fulltime practice of pain. It is impossible to do justice with part time commitment.
2. To reach this state of fulltime practice some level of seniority is necessary to be recognized by other consultants so that the practice is sustained. The goodwill and good wishes of other senior anaesthesiologists paves the way for a successful establishment of practice. Seniority is also helpful in handling the adulation consequent to successful treatment of intractable problems. This is an unusual experience to an anaesthesiologist used to doing a thankless job. To retain equanimity in the face of such adulation requires maturity. So it is preferable that pain be approached by an anesthesiologist after a few years of anaesthesia practice to gain expertise, mature perspective and contacts.
3. One way to reconcile fulltime commitment with some semblance of income is to form a group and practice as a group with probably one/two days of anaesthesia practice
4. Attachment to a hospital will enhance practice by way of
  - a. Some level of visibility for references of patients from other consultants. Successful treatment and happy patients and consultants have way of setting up a very effective grapevine that feeds practice.
  - b. Access to a good library
  - c. Access to already existing infrastructure vis-à-vis an OPD, good functional operation theatre, image intensifier etc.
  - d. Saving on the expense of setting up a pain clinic with adequate infrastructure equipment etc. It takes away an element of tension and stress to pay up loans etc. This lack of stress makes for a more meaningful practice where one treats every patient the same way irrespective of his paying ability and the luxury of treating poor patients gratis.
  - e. The hurdles of procuring opioids, their licenses renewals etc so that the consultants time is free to pursue the medical intricacies of pain problems.

- f. Credibility- In the early days of practice, a consultant in a hospital has a higher credibility in the public view than one on his/her own.
- g. In case of medicolegal problems an institution may lend its support.
5. A most important requisite for successful pain practice is to recognize the limitations of any branch of medicine and augment it with alternative medicine practices like acupuncture which is extremely useful in many untreatable pain conditions. Obviously adequate time has to be spent on learning its theory and practice. It has to be given the respect due to an ancient science and not dismiss it as hocus pocus mumbo jumbo.

**A resume of 3 years of practice;** This is given to highlight the sheer variety of cases in pain practice. The majority of pain conditions stem from the musculoskeletal system. An in depth understanding of the locomotor musculoskeletal system is imperative for a comprehensive pain relief. To achieve this considerable amount of time has to be spent on learning the correct ways of orthopaedic examination and patient assessment. This can be done by attending the orthopaedic OPD of a busy hospital or a senior consultant, generous enough to impart knowledge.

Many improvisations are needed to treat the many varieties of complex pains. Continuous plexus block is one such used in many patients of CRPS 1 and those with herpes and CRPS associated with postmastectomy pain. The published material is very meager and as a result the recommendations for the treatment modalities are even more sparse. This author has used it successfully in many patients of CRPS 1 and neuropathic pains seemingly refractory to other treatments. But there are no publications in this treatment as the western journals do not seem to accept the seemingly maverick concept of a long term continuous block for 30-50 days (figs 9-13). When these people were treated with continuous plexus blocks they showed a dramatic relief of pain which has persisted for months and years. Utilization of alternative medicine techniques like acupuncture and its physiologically based western counterpart IMS (intramuscular stimulation) helped tackle a large number who would find no relief with traditional allopathic treatments of pain. Many patients who had epidural steroid injections were followed up with IMS to optimize their relief. So much so IMS forms a very large part of authors treatment plan for varied conditions like myofascial pain syndromes (fibromyalgia, spondylitis, lumbago sciatica, tennis elbow, carpal tunnel syndrome etc) and as an adjuvant (fig. 14) with other techniques like nerve blocks, continuous plexus blocks etc.



**Figs. 9,10 :** 72 year old man with Sudeck's 6 m after open reduction of Colle's fracture Note the gross oedema as a manifestation of autonomic disturbance associated with hypertrophic stage of CRPS 1. Severe pain with inability to make a fist

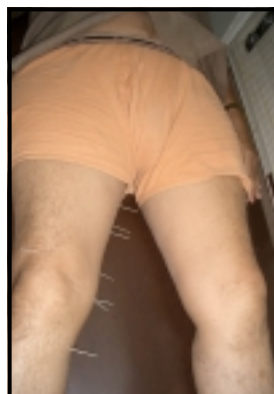


**Fig. 11 :** Continuous block of brachial plexus by infraclavicular approach. The catheter is connected to an elastomeric pump with which the patient goes home with a continuous infusion of local anaesthetic bupivacaine The pain relief from the block allows a vigorous physiotherapy.



**Figs. 12, 13 :** 40 days after block Complete resolution of oedema and restoration of movement. The patient continues to be pain free 3 years after treatment

Unfortunately there appear to be no statistics of Indian experience. However, the statistics of 1 year of author's practice, the conditions treated, and the treatment given is shown in the table given below. As can be seen intervention seems to cut down on the medications and in many cases does away with them. Among Indian patients both rural and urban, there appears to be an ethnic aversion to medications. They feel that the medications cause more trouble, side effects and has a lasting effect on their system. They seem to resent their "dependence" on medications. Most patients take medications only when the pain escalation demands it. The psychological evaluation by MMPI revealed a surprisingly low number of abnormal responses to pain. Once the physical pain is relieved our patients seem eager to get on with their professional and personal lives. Whether this is because they have to work and earn if they are to



**Fig. 14 :** Severe neuropathic pain after hernioplasty. Patient had complete relief of pain after a continuous lumbar plexus block. But he had a continuous residual stiffness of the adductor muscles which made walking difficult. 3 sessions of IMS resolved the problem Patient continues to be pain free 2 years after the treatment

eat, from a lack of social security is open to speculation Our patients somehow seem to be more content, more centred than their western counterparts. Whether this comes from a stable family structure or some other ethnic factor is uncertain.

In conclusion, pain practice in India is possible if every hurdle is treated as a challenge to be overcome, dogged determination in the face of paucity of effective drugs, hurdles of a non-existent infrastructure designed for pain, initial obvious skepticism from patients and colleagues. However the satisfaction of doing a job well done in a patient who has been given up as untreatable by respected senior consultants is a blessing from a different realm altogether.

**Further reading**

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