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## Peri-operative analgesia in Day care surgery

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*Continued from previous Issue....*

Most daycare procedures are associated with relatively minor surgical trauma, so discharge of these patients frequently depend on recovery from anaesthesia. Top priorities for successful outpatient surgery are 4 A's: Alertness, Ambulation, Analgesia and Alimentation. Most common reasons of unanticipated delay in hospital discharge are excessive fatigue, nausea, vomiting and unrelieved pain. Rapid recovery from use of short acting anaesthetic agents has led to the new concept of fast tracking and by passing the Post Anaesthetic Care Unit (PACU), whose success depends to a considerable extent on effective postoperative pain management.

### Impact of pain in the recovery & discharge of patient after surgery:

The success of day care surgery depends to a large extent on both: effective control of operative-postoperative pain and minimizing the side effects of sedation, nausea and vomiting.

Other reasons for delay in discharge include hypotension, dizziness, unsteady gait and lack of an escort (3). One such prospective study of 10,008 ambulatory surgical patients found a 5.3% incidence of severe pain in the PACU after ambulatory surgery 2. Patients following orthopaedic surgery had the highest incidence of pain (16%) followed by urologic (13.4%) and general surgical procedures (11.5%).

Severe postoperative pain not only causes extreme discomfort, sleep deprivation and suffering, which may last several days, but, also effect return to work and thus, the community health services. It may also lead in chronic pain syndromes and behavioral changes in paediatric age group. Moreover, prevention of postoperative pain also is a clear predictor of Post-Operative Nausea Vomiting (PONV) in children (4).

Choice of anaesthetic technique and perioperative analgesia: Safety, rapid recovery and minimal postoperative problems are essential in selecting surgical procedures and anaesthetic technique. Several new drugs have significant advantages in terms of rapid onset, excellent analgesia and amnesia, good surgical conditions and early recovery. These drugs include:

- \* Sedative Hypnotics- Propofol
- \* Analgesics: Remifentanil, Alfentanil, Ketorolac, Tenoxicam.
- \* Muscle Relaxants: Mivacurium, Rocuronium and Rapacuronium.
- \* Inhalational Agents: Sevoflurane, Desflurane

The nature, technique, extent and duration (>90 min) of surgery and anaesthetic technique, are the main predictors of postoperative morbidity. Rigorous abdominal decompression after laparoscopic sterilization reduces the need of postoperative opioids. Gasless and abdominal wall lift procedures decrease the incidence of PONV. Incidence of postoperative sore throat can be decreased with the use of LMA (Laryngeal Mask Airway) in place of endotracheal tube. The incidence of myalgias is 20%-70% with the use of Succinylcholine, hence, should be avoided (5). In children, the incidence of PONV increases after a single dose of Morphine and decreases with the use of Propofol 1. Use of regional nerve blocks decreases the requirement of postoperative NSAIDs and opioids.

The role of opioids in day care surgery is controversial because of their emetic property and there are enough data to support that their avoidance decreases the PONV and preclude oral intake of fluids. Newer ultra-short acting opioids like Remifentanil are associated with predictable and rapid recovery with no respiratory depression, but there is requirement of longer acting analgesic as soon as Remifentanil infusion is stopped.

Regional anaesthesia reduces the hazards and discomfort of general anaesthesia like sore throat, airway trauma and muscle pain. It gives analgesia without sedation, resulting in early ambulation and prolonged postoperative analgesia. Regional anaesthesia does have some disadvantages; it may take longer and it requires active co-operation of the patient and the surgeon. Induction may be associated with minor discomfort and there is risk of complication, specific to each block and to the local anaesthetic drug used. Moreover, not all patients are suitable for

local anaesthesia; anxious patients may require heavy sedation (6). Still, the daycare surgery performed under local anaesthesia is often the simplest, safest and cheapest, with very little sedation required if the atmosphere is conducive and the surgeon handles the tissue gently.

### Regional anaesthesia for perioperative pain:

Regional anaesthesia requires less physiological trespass as compared to general anaesthesia, so they are particularly suited to the ever growing population of high risk elderly patients presenting for day care procedures. At the completion of surgery, infiltration of wound with long-acting local anaesthetic provides prolonged postoperative analgesia. In children, use of regional anaesthetic may reduce the requirement of general anaesthesia resulting in early recovery and less PONV.

### Peripheral nerve blocks:

Peripheral nerve blocks provide excellent analgesia over a limited field with minimal side-effects. The blocks are generally easy to perform, inexpensive and very safe. The block should have residual analgesia in the post-operative period, minimizing the need of systemic analgesia. The limb with residual block should be taken care of. Opioid and Non-opioid adjuncts may be added to local anaesthetic solution to improve or prolong the analgesic effect.

### Intra-articular analgesia:

Intra-Articular drug administration has gained popularity because of its simplicity and efficacy in achieving anaesthesia for diagnostic and operative arthroscopy and for postoperative analgesia.

### Central neural block:

Spinal and epidural anaesthesia are an effective alternative to general anaesthesia in ambulatory surgery. Combining local anaesthetics with short-acting opioids and non-opioid adjuncts decrease the total dose requirements of local anaesthetics and help in early ambulation. Anaesthetic benefits with central block are evident in post-operative period where the patient may be weaned out immediately and the residual block gives pain relief, even lessening the pain after the block has worn off. This is a major benefit in day care surgery, both in terms of patient comfort and early discharge.

### Strategies for post-operative pain management:

Optimal post-operative pain control for daycare surgery should be effective and safe with minimal side-effects, should facilitate

recovery and be easily managed by patients at home.

### Pain assessment:

Pain assessment should be done frequently in post-operative period using either Visual Analogue Scale (VAS) or verbal/observer scoring system, every 4 hourly, for day care surgery. A practical scheme is to assess pain at rest in early recovery; at rest and during activity in late recovery (7).

### Pain management in PACU:

Pain control starts intraoperatively by short-acting opioids, NSAIDs, and regional anaesthesia. Discharge may be delayed by PONV and sedation. Combination of analgesics that act by different mechanisms, result in additive or synergistic analgesia, allowing total dose of drugs to reduce and so, the side-effects.


### Analgesic after discharge:

Oral analgesics are the mainstay of controlling pain control at home and it should be taken pre-emptively and regularly starting before the effect to local anaesthetic has worn off. Paracetamol, being effective, safe and cheap, is the most commonly used drug. It has dose-related potency, should be administered correctly for optimal effect. Strong opioids are avoided because of their side-effects. Codeine, Dextropropoxyphene and Tramadol are the commonly used opioids. NSAIDs are still the main stay of day care surgery regimen with mild to moderate pain. They provide effective analgesia and their anti-inflammatory effects help reduce local oedema and minimize the use of more potent drugs, along with their accompanying side-effects. Even with gastrointestinal, haematological and renal side-effects, their benefits greatly outweigh their risks.

### Patient controlled regional anaesthesia (PCRA):



Administration of local anaesthetic into the surgical wound is effective and safe, but requires expertise and the effect lasts only for few hours. This has been made possible using an elasto-metric balloon pump, which allows the patient to self-administer local anaesthetic analgesia at home. The pain relief with this technique is excellent with no major complaints of infection. The only concern being toxicity of local anaesthetic, if the patient either overuses or forgets to close the clamp. The patients and their escorts should be made aware of severity of pain and the use of various analgesics in the preoperative clinical visit.

*To be continued, In the next Issue.....*



**Surgery & discharge on same day for:**  
Hernia, Piles, Fistula, Fissure, Diabetic foot, Pilonidal sinus, Ingrown toe nail, Lipoma, Sebaceous cyst, Abscess, Circumcision, Vasectomy, D & C, Tubal Ligation, Diagnostic Lap; etc. (In selected cases)  
**Extended stay:** Appendix, Gall stones, Hystrectomy, etc.

**Other Surgeries related to:** Paediatric, Urology, Plastic, ENT, Vascular. Chemotherapy & related treatment. (Please take prior appointment).

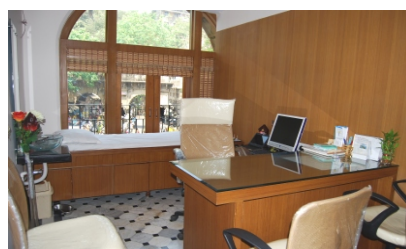
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