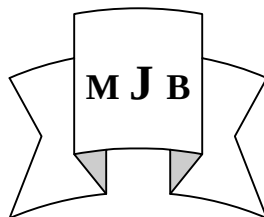


The Use of Epidural Catheter for Anaesthesia and Relieving of Postoperative Pain in Transvesical Prostatectomy Using Bupivacaine

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Abstract

Objective: To determine the impact of preemptive epidural anaesthesia and analgesia on postoperative pain and other clinically important outcome variables after transvesical retropubic prostatectomy.

Patients and method: A total of 28 patients undergoing transvesical prostatectomy for the treatment of benign prostatic hypertrophy were randomized to either group A (10 patients underwent the surgery under general anaesthesia. And the other 18 patients scheduled in whom an epidural catheter for anaesthesia and treating postoperative pain.

Epidural bupivacaine 0.5%, was administered for induction of anesthesia and throughout the entire operation, followed by aggressive postoperative epidural analgesia for all patients in group B, pain scores obtained 48 hours, Pain recorded by using visual analogue scale VAS. Evaluation of our perioperative anaesthesiologic regimen, in terms of safety, patient comfort, the time in operating room and recovery room, average blood loss (depending on pcv & Hb%). time to return of bowel function, duration for need to bladder wash.

Results: There were no significant differences between the groups with respect to age, height, weight, or operation time. Regarding the operative time in the operating room revealed no differences in both groups (60–90 minutes including the time of induction of anaesthesia), but the time needed in recovery room for those patients with GA about 15–40 minutes. The recovery time of bowel function in group B (8–12 hours) was less than that for group A (16–24 hours). The duration for irrigation of bladder wash in group A was 42–72 hours, while for those in group B was 24–42 hours. The need for blood transfusion in 6/10 (60%) in group A, and 4/18 (22%) in group B. The postoperative pain score using VAS, The results revealed there is a significant difference of the pain score between group A (7.65±1.56), and 1.25±0.2 in group B.

Conclusions: The epidural catheter for anaesthesia and preemptive administration of epidural analgesics can lead to long-term decreases in postoperative pain and earlier resumption of normal activities.

الخلاصة

تمت دراسة ٢٨ مريض اجريت لهم عملية أستئصال غدة البروستات (تضخم البروستات الحميد) حيث صنف المرضى الى مجموعتين (A & B) حيث تم اجراء العملية في المجموعة A تحت التخدير العام بينما في المجموعة B (٨ مريض) تم استخدام epidural catheter لغرض تخدير نصفي ولعلاج ألم ما بعد العملية بأستخدام مادة bupivacaine. أظهرت النتائج بان الوقت المستغرق في صالة العمليات لكلا المجموعتين متساوي تقريبا ولكن لمرضى المجموعة A تحتاج الى غرفة الافاقة . الوقت لعودة وظيفة الامعاء للمجموعة B اقل مما للمجموعة A . الحاجة الى غسل المثانة لفترة اطول للمجموعة A عنها للمجموعة B . الحاجة الى

الى اعطاء دم لمجموعة A اكثر مما لمجموعة B. اظهرت النتائج فارق مهم في مستوى الالم بين المجموعتين حيث سجلت مستوى 7.65+/-1.56 للمجموعة A و 1.25+/-0.2 للمجموعة B.

Introduction

The reduction or abolition of acute pain from accidental or intentional trauma (surgery) is accomplished by delivery of local anesthetics to the skin by topical application or subcutaneous infiltration, to peripheral nerve by percutaneous injection, or to the neuraxis by administration into the epidural or intrathecal spaces [1]. Local anesthetics are widely used for the prevention and relief of both acute and chronic pain[2]. Appropriate perioperative pain therapy may decrease patient morbidity, so the treatment of postoperative pain is of justifiable public concern. Epidural anesthesia/analgesia is one of the advances that is gaining rapid acceptance due to a perceived reduction in morbidity and overall patient satisfaction. The introduction of longer acting local anaesthetic drugs, such as bupivacaine, and the development of bacterial filters has led to the interest in this method of postoperative pain relief, and reduction in postoperative narcotic requirement[3]. Recent studies suggest that advances in anesthesia and postoperative analgesia can affect postoperative outcome. Epidural anesthesia and analgesia have the potential to reduce or eliminate the perioperative physiologic stress responses to surgery and thereby decrease surgical complications and improve postoperative outcomes[4-6]. prostatectomy is a procedure used to alleviate the symptoms of bladder outflow obstruction, usually caused by

benign prostatic hypertrophy (BPH). BPH affects 50% of males at 60 years and 90% of 85-year-olds and so prostatectomy is most commonly performed on elderly patients, a population group with a high incidence of cardiac, respiratory and renal disease. The commonest cause of death being myocardial infarction. Safe anaesthesia depends on the detection and optimisation of co-existing diseases, and on weighing up the relative risks and benefits of regional and general anaesthesia for each patient[7].

Patients and Method

A total of 28 patients undergoing transvesical prostatectomy for the treatment of benign prostatic hypertrophy were investigated which include

- Full blood count or haemoglobin level
- Creatinine and electrolytes - this will detect renal impairment or overt renal failure, commonly secondary to obstructive uropathy.
- ECG routinely for all patients.
- Group and save - consider cross-matching blood for all patients (2 pints) .
- Urinalysis (for glucose, protein, blood, white blood cells)
- Blood glucose
- Chest radiograph.

They randomized to either group A (10 patients underwent the surgery under general anaesthesia. And the other 18 patients scheduled in whom an epidural catheter for anaesthesia and treating postoperative pain.

Epidural bupivacaine 0.5%, was administered for induction of anesthesia, a confirmed block to at least T10 (level of the umbilicus) is required prior to the start of surgery. 2.5 to 3ml of plain or heavy bupivacaine 0.5% reliably achieves this, and provides up to 3 hours of dense motor and sensory blockade and throughout the entire operation, followed by aggressive postoperative epidural analgesia(bupivacaine every 8- 10 hrs via the epidural catheter) for all patients in group B.while for those patients in group A need for pain killer(paracetamol, tramadol)which given as intramuscular injection, pain scores obtained 48 hours, Pain recorded every 6 hours by using visual analogue scale VAS[8].Evaluation of our perioperative anaesthesiologic regimen, in terms of safety, patient comfort, the time in operating room and recovery room, average blood loss(depending on pcv & Hb%). time to return of bowel function, duration for need to bladder wash.

Results

There were no significant differences between the groups with respect to age, height, weight, or operation time. Regarding the operative time in the operating room revealed no differences in both groups (60--90 minutes including the time of induction of anaesthesia),but the time needed in recovery room for those patients with GA about 15—40 minutes. The recovery time of bowel function in group B (8—12 hours) was less than that for group A (16—24 hours).The duration for irrigation of bladder wash in group A was 42--72 hours, while for those in group B was 24—42 hours. The need for blood transfusion in 6/10(60%) in group A, and 4/18(22%) in group B. The postoperative pain score using VAS, The results revealed there is a significant difference of the pain score between group A(7.65+/- 1.56), and 1.25+/-0.2 in group B. There were no significant differences between the groups with respect to incidence of complications (DVT, PE).

Table 1 clinically important outcome variables after transvesical retropubic prostatectomy

The variables	Group A	Group B
The operative time	60--90 minutes	60--90 minutes
Time needed in recovery room	15—40 minutes	0
recovery time of bowel function	16—24 hours	8—12 hours
duration for irrigation of bladder wash	42--72 hours	24—42 hours
need for blood transfusion	6/10(60%)	4/18(22%)
The postoperative pain score using VAS	7.65+/- 1.56	1.25+/-0.2
Clinical incidence of complications (DVT, PE)	0	0

Group A: 10 patients underwent the surgery under general anaesthesia

Group B: 18 patients scheduled in whom an epidural catheter for anaesthesia and treating postoperative pain.

DVT: deep venous thrombosis

PE: pulmonary embolism

Table 2 pain scores of the both groups for two days (number of patients, range, mean, SD and SE of pain scores)

	Day 1		Day 2	
	Group A	Group B	Group A	Group B
Number of patients	10	18	10	18
Range	5-10	0-3	5-10	0-3
Mean	7.65	1.25	7.35	1.95
SD	1.56	0.91	1.75	0.82
SE	0.35	0.2	0.39	0.18

Group A: 10 patients underwent the surgery under general anaesthesia.

Group B: 18 patients scheduled in whom an epidural catheter for anaesthesia and treating postoperative pain.

SD: standard deviation.

SE: standard error.

Discussion

A recent review of the available literature on the effect of epidural analgesia upon gastrointestinal motility has concluded the following, epidural local anesthetics (e.g. bupivacaine) can have clinically significant effects to decrease the duration of ileus after abdominal surgery[9]; and the most optimal post-operative analgesia, in terms of minimizing post-operative ileus, appears to be a combination of low-dose epidural bupivacaine plus morphine; The mechanism of this effect is likely to be a partial block of the sympathetic innervation to the gut by epidural local anesthetics[9], decreased time to recovery of bowel function and lowered hospital charges[11]. Epidural anesthesia

significantly minimizes blood loss[12,11] during lower abdominal/pelvis and hip surgery. The proposed mechanisms are by lowering the mean arterial blood pressure (MAP) through sympatholysis and redirecting blood flow away from the operative site[13]., intraoperative epidural administration of local anesthetics blunts the physiologic hypercoagulable surgical stress response and modifies the perioperative hypercoagulable state[14]. This occurs via several mechanisms, such as blockade of sympathetic efferent signals, enhanced fibrinolytic activity, and systemic absorption of local anesthetics. significant reductions in cardiac morbidity associated with use of intraoperative and postoperative

epidural anesthesia/analgesia using local anesthetics plus opioids[15]. The advantages of the regional technique include, Possible reduced blood loss, requiring fewer transfusions. Avoids effects of general anaesthesia on pulmonary pathology. Good early post-operative analgesia. Reduced incidence of post-operative DVT/PE. And Lower cost[16-18].

Conclusions

- The epidural catheter for anaesthesia and preemptive administration of epidural analgesics can lead to long-term decreases in postoperative pain and earlier resumption of normal activities.
- Surgeons should become familiar with and embrace this technology, and they should actively participate in the design and conduct of studies that will answer the question about the effects of epidural analgesia on the surgical stress response, thromboembolic complications, immune function, respiratory function, and the cardiovascular system which result in objective improvements in outcomes in surgical patients?

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