

## General Surgery and Spinal Anesthesia

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### ABSTRACT

Anesthesia and anesthetist are the co-worker to surgery. Surgeon and anesthetist with other subordinates is the surgical team. Patient satisfaction, surgical comfort to surgeon, patient, anesthetist and surgical team is the main stay and key point to select the type anesthesia to be given to particular individual. We had been doing a lot of general surgery under spinal anesthesia. Here main focus is laid down on gall bladder and renal surgery, which are relatively difficult to get done in spinal anesthesia without good co-operation of anesthetist. We had been doing renal and gall bladder surgery under spinal for the last more than 40 years, as there used to have no anesthetist in peripheral hospitals of Nepal, so giving spinal anesthesia by self and then doing surgery was the trend, which is now changed, as well-trained anesthetists are now available even in every big peripheral hospital of the country. We are presenting a record of last 10 years of renal and gall bladder surgery done under spinal anesthesia.

We have done total 248 cases of renal stones including 12 nephrectomies for gross hydronephrosis with nonfunctional kidney big mass and 355 cases of open cholecystectomy through classical transverse subcostal incision.

**KEYWORDS:** General Surgery and Spinal Anesthesia

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### INTRODUCTION

Selection of type of anesthesia for particular individual is the primary concern of anesthetist, though consultation of concerned surgeon is also mandatory. Spinal anesthesia, being easy to administer, most economical than general anesthesia, easy post operative outcome, least fear of anesthesia and surgery to patient, as patient is awake all the time of surgery and easy to make person understanding, spinal anesthesia was preferred to general anesthesia in these patients. Total 603 cases were operated in last 10 years under spinal anesthesia. The first spinal analgesia was administered in 1885 by James Leonard Corning, a neurologist in New York. He was experimenting with cocaine on the spinal nerves of a dog when he accidentally pierced the dura mater<sup>1</sup>. The first planned spinal anesthesia for surgery on a human was administered by August Bier on 16 August 1898, in Kiel, when he injected 3 ml of 0.5% cocaine solution into a 34-year-old laborer. After using it on 6 patients, he and his assistant each injected cocaine into the other's spine. They recommended it for surgeries of legs, but gave it up due to the toxicity of cocaine<sup>1</sup>.

### MATERIAL AND METHOD

This is prospective study done at Bheri Zonal Hospital and Western Hospital, Nepalgunj. With patient ease, surgical comfort and best post operate outcome, we did surgery under spinal anesthesia. All patients were sent to Anesthetist for preanesthetic checkup. Once patient came to operation theatre intravenous cannulation with 18 G canula done, monitor attached and loading done with 1litre of ringer lactate, spinal anesthesia given on lateral position keeping operative site downward. In lateral position 3 to 4 ml heavy bupivacaine given at Lumber 2,3 level to get high level of block and any fall in blood pressure was managed by giving Vaso pressure. We got best possible muscle relaxation. Most of all Gall bladder and renal surgery cases were operated under spinal anesthesia. No conversion to general anesthesia was needed and completion of surgery also did not take average more than 30 minute or so. For gall bladder surgery about 5 centimeters long subcostal transverse incision on lateral aspect of rectus abdominus was given to open abdomen and surgery was done as usual. For renal

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surgery classical described method was used. Some of huge renal mass of nonfunctional hydronephrotic/ pyonephrotic kidney were needed some extension of incision in the line of previous incision and surgery completed. Some of hydronephrotic / pyonephrotic renal mass were too huge and

were adherent with surrounding structures very badly and had much difficulties in its removal. Corrugated drain was kept as usual and surgery completed. Children below 15 years were not included as good co-operation was difficult to get from them.

| Gall Bladder surgery |            |            | Renal Surgery |            |            |
|----------------------|------------|------------|---------------|------------|------------|
| Age range            | Male       | Female     | Age range     | Male       | Female     |
| 15-25 years          | 8          | 18         | 15-25 years   | 6          | 8          |
| 26-35 years          | 14         | 22         | 26-35 years   | 17         | 16         |
| 36-45 years          | 17         | 36         | 36-45 years   | 20         | 18         |
| 46-55 years          | 22         | 42         | 46-55 years   | 26         | 24         |
| 56-65 years          | 34         | 56         | 56-65 years   | 24         | 35         |
| 66-75 years          | 22         | 45         | 66-75 years   | 18         | 22         |
| Over 76 years        | 7          | 12         | Over 76 years | 5          | 9          |
| <b>Total</b>         | <b>124</b> | <b>231</b> |               | <b>116</b> | <b>132</b> |

## RESULT

In the past 10 years, we did gall bladder surgery on male 124 and female 231 cases. As far as renal surgery is concerned, various types of renal surgery on male 116 and female 132 cases were operated under spinal anesthesia. In all cases we got excellent muscle relaxation, good co-operation of patient and all surgical team members. None of patient needed conversion to general anesthesia, excellent post-operative recovery and very good patient satisfaction. In 110 patient there was fall in Blood pressure and 6 mg of Mephentermine given and did not need any further management. Hospital stay was also shorter and most of patients were discharged after the corrugated drain was removed usually after 48 to 96 post-operative hours. Spinal anesthetic procedure as such is too economic than that of general anesthesia and chest problem was also not seen in spinal anesthesia. Apart from, a lot of cases of lower abdomen and lower limb surgery under spinal anesthesia are being done, which proved the spinal anesthesia to be very effective and acceptable for gall bladder and renal surgery.

## DISCUSSION

Xavier et al stated the factor to determine the type of anesthesia to be used for particular individual case is patient choice and his fear for particular type of anesthesia, his anxiety state and expected ease of recovery. Spinal anesthesia with short-acting local anesthetics was preferred to general anesthesia in ambulatory surgeries and was associated with a high degree of patient satisfaction.<sup>2</sup> Ulrica Nilsson et al have mentioned that there seems to be poorer post operative recovery after general anesthesia than the spinal anesthesia<sup>3</sup>. Stephen J Head et al have stated “ Compared with a traditional model using general anesthesia in a single operating room, the implementation of a model using regional anesthesia with two swing operating rooms

was associated with reduced room turnover times, improved recovery profiles, and a higher case throughput”<sup>4</sup> Jonathan Bourget- Murry et al, have studied perioperative outcome on 6100 cases, who underwent total hip or knee arthroplasty for osteoarthritis under spinal or general anesthesia and commented that “Compared with general anesthesia, spinal anesthesia has many benefits for patients undergoing total hip (THA) or total knee (TKA) arthroplasty, but few studies have explored rates of morbidity and mortality. We aimed to compare perioperative outcomes by anesthetic type for patients undergoing THA or TKA for osteoarthritis.”<sup>5</sup>, Edward Yap et al have studied on 11523 cases, out of them 10003 were given spinal anesthesia and 1520 were operated under general anesthesia and found that spinal anesthesia group felt less postoperative pain and needed less analgesia and did not complained of postoperative nausea or vomiting, thus they were ready for early discharge from hospital. This reflects on good postoperative recovery after surgery under spinal anesthesia.<sup>6</sup>

R L Johnson et al studied on 10488 cases who underwent arthroplasty for hip or knee osteoarthritis under spinal or general anesthesia and found no significant difference in either the anesthesia used. Mortality, surgical duration, chest pain, nerve palsy, thromboembolic disease with antithrombotic measures taken, was more over the same in both groups. They say that there is limited quantitative evidence that spinal anesthesia improves perioperative outcome.<sup>7</sup> Mc Kayla E. Kelly. BS. et al conducted a retrospective study of general verses spinal anesthesia on 500 cases of total hip arthroplasty and found spinal anesthesia as an alternative to general anesthesia and found low incidence of postoperative nausea- vomiting, less post operative pain so less consumption of pain medicine, less time of hospital stay and less perioperative blood loss. They stated reduced arterial and venous pressure, a physiological

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response for perioperative reduced blood loss under spinal anesthesia.<sup>8</sup>

Our finding and study had been in conformity with above mentioned, except R L Johnson et al who say that there was no significant difference in either the method of anesthesia. We and our patients of gall bladder and renal surgery were extremely happy with spinal anesthesia. Postoperative recovery was rapid, perioperative comorbidity and hospital stay was less. Incidence of postoperative nausea and vomiting was less, postoperative pain and discomfort was less and oral feeding could be started much earlier than the surgery done under general anesthesia. Anesthetist used to be happy and used to feel comfortable in starting surgery under spinal than general anesthesia as in general anesthesia constant watch and monitoring of patient used to be more and constant than surgery under spinal anesthesia.

### CONCLUSION

Spinal anesthesia is one of good alternative to general anesthesia for surgery of gall bladder and renal problems. It saves time, money, manpower and comfort of surgical team and the patient in particular. Patient comes to operation theatre awake and immediate after surgery goes back to postoperative ward awake at the same time meets the relative as if nothing is done in the operation theatre and all feel comfortable. Spinal anesthesia to be recommended for surgery of gall bladder and kidney problems along with surgery of lower abdomen and lower limb.

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