

Research Article

Prospective Study on the Value of Continuous Spinal Anaesthesia in the Case of Femoral Neck among Elderly. 5 Years Chu Dantec

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Abstract: Continuous spinal anesthesia (CSA) is an easy spinal anesthesia technical achievement and without major complication. For this reason we proposed this prospective study from January 2008 to December 2012 about the elderly victims' bill femoral neck for whom the CSA is indicated. We had sixty seven patients, mean age 78 years and a sex ratio of 1.5. The results were positive for several reasons: hemodynamic stability in perioperative, comfort of the surgeon and patient satisfaction after three months.

Keywords: Femoral neck fracture, Spinal continues, Elderly, Anesthesia.

INTRODUCTION

The femoral neck fracture is a relatively common condition in the elderly. It may be critical condition for changing the quality of life of these patients.

The management of anesthesia and analgesic process is a real challenge in this kind of surgery, considering the significant risks associated with perioperative anesthesia on the patient, as well as risks linked to the actual surgery. Conventional spinal anesthesia represents almost half of all anesthesia performed in France[1]. Its intensity and injection speed are root causes of vascular, cardiac and pulmonary side effects.

Continuous Spinal anesthesia with titration of weak doses of anesthesia offers similar benefits as an effective sensorimotor block, with less hemodynamic effects. It also allows for further injections, to enable long-lasting surgeries [2,3]

The aim of our study was to investigate the value of continuous spinal anesthesia for femoral neck fractures in patients over seventy five years old, specifically in patients presenting challenges to perioperative care.

PATIENT & METHOD

To realize the study, we undertook a prospective and descriptive study over a period of five years. The sample included patients aged seventy five

years or above, with a broken femoral neck resulting from surgery.

Demographic information (such as age, sex, body mass index) was collected for each patient, as well as information about their medical history, surgical history, treatment and the ASA classification.

During the preoperative phase, a cardiac evaluation was performed on all patients. Followed by the administration of treatment.

Treatment wise, beta-blockers, aspirin and statins were administered. Next, Thienopyridines (PLAVIX, Ticlid®) and AVK were stopped for five days, followed by LMWH. Conversion inhibitors and antagonists from the angiotensin receptors were interrupted 48 hours before surgery. These were replaced by calcium channel blockers. Prophylactic anti-coagulation was realized using LMWH, till a minimum of 12 hours prior to surgery.

Monitoring during the surgery was done with EKG, noninvasive blood pressure and pulse oxymetry (SPO₂).

After implementation intrathecal catheter, we injected 1.5 ml of a mixture of bupivacaine HB 4 ml and fentanyl 1ml and a reinjection A DC All 30-45 minutes need.

A slight analgesic sedation was consistently Associate 0.25mg / kg of Ketamine and Midazolam 0.2 mg/kg.

The operating room after taking an intravenous infusion, a monitoring of EKG (DII and V5) for the ST segment of the heart rate, the Saturation fingers and blood pressure. Oxygen therapy to 3/min and a pre-filing of 5 to 15 ml / kg of 0.9% saline serum were carried out in accordance cardiac status.

After two disinfections, a sterile field was set up next to the puncture site and the first of the interspinous space L3 -L4 or L4- L5 was performed in lateral recumbency for all patients. When the needle penetrated into the subarachnoid space CSF flux, it was oriented so that the catheter is directed cephalic. The latter was introduced without resistance, over a maximum distance of 3 cm. The needle was then removed and the attached catheter. An antibacterial filter was granted and was injected the initial bolus. After a cold sensitivity tests an engine block and the patient was installed by the surgeon with verification of all contact area.

During the intervention parameters (CR, Blood pressure and SpO2) were recorded (all) the whole 5 minutes. One Hypotension was treated with a refilling 10 ml / kg and then ephedrine bolus (3mg) or néosinéphrine (from 40µg) if cardiac status was delete. At the end of the procedure, the catheter was removed in all patients, a postoperative multimodal analgesia was proposed with a goal of analogy scale less than 3.

RESULTS

Sixty seven patients were included: the average age was 78 years (75-83). Men represented 57 % of patients. Time for carrying out the technique was 12 minutes (5 -18).

The average number of bolus was 3 with a range of 1 to 4.

Only 5 patients experience hypotension curbed by filling, one had ephedrine and another of the néosinéphrine. No electrical EKG changes perioperative was observed.

No conversion to general anesthesia. The engine block was complete in all cases and the installation never exceeded seven minutes.

The average duration of response was 58 min with a range of 49-87 min. Hemodynamic stability evaluated based on clinical surveillance data was satisfactory. No side effects were observed during the study.

No electrical or enzymatic modification postoperatively was noted. No headache lifted after five days following the intervention or death during the three months after the procedure.

Epidemiological characteristics are shown in Table I and intraoperative data in Table II.

Table-I : Epidemiological characteristics

Characteristics	Patients =67
Sex (M, F)	37/30
Age (years)	78 [75-83]
Heart failure	3 cases
HTA	21 cases
Ischemic heart	15 cases

Table-II: Per operating data per

Paramètres	Patients n=67
Completion time	12[5-18]
Approach (Median/ paramedian)	60/7
Boluses	3[1-4]
Intervention Time (min)	58 [50- 87]
hypotension	5 cas
Ephédrine/néo (2)	1(3+3 mg éphédrine/40µg)
Filling means Volume	8ml/Kg [6 – 15]

DISCUSSION

During our study continuous spinal anesthesia had provided good hemodynamic stability in-operative and postoperative. The number of patient (operated) surgery after hip fracture is increasing due to the aging of the general population. Over 30% of these patients more than 85 years [4]. The great debate is that of the choice of anesthetic technique. All of the literature

showed no benefit of locoregional anesthesia spinal died, compared with general anesthesia. A meta-analysis of 141 randomized trials involving 9559 patients (observed) to observe a reduction in mortality and DVT reduction to one month for spinal anesthesia compared to general anesthesia [5]. Other studies on large collectives have not found difference in

cardiovascular morbidity and mortality according to anesthetic technique [4-7].

Regarding plexus blocks, they could be alternative techniques to the CSA, however femoral neck surgery requires blocking both the plexus (lumbar and sacral). Achieving these blocks often requires patient handling very painful and can be associated with failures in the territory of the obturator nerve [17] and sometimes complicate deleterious hemodynamic events.

Recent epidemiological surveys on mortality related to anesthesia, have objectified the occurrence of cardiac arrest during conventional spinal anesthesia, especially in the elderly [5]. These data have only to recall the very poor hemodynamic tolerance of a sympathetic block extended and brutal in frail patients [15,16]

The main problem with conventional spinal anesthesia being the lack of predictability of the extent and duration of sensory block [8,11,13], the result is often an anesthetic overdose. Indeed, the duration of spinal anesthesia but also its sensory level is both proportional to the dose [9,13,16,21], it is understandable that the fear of failure in terms of and / or duration, dose important is administered. To overcome these drawbacks, the most appropriate technique could be at our level continuous spinal anesthesia. The insertion of an intraspinal catheter allows titrate local anesthetic and reinjecting necessary. It reduces the extent and intensity of the sympathetic block and limit the hemodynamic consequences of spinal anesthesia in patients with weak cardiovascular system [10,19,21].

In our work hemodynamic stability was satisfactory; this joins the results of the team Favarel - Garrigues which showed the superiority of the CSA in relation to the RA in terms of hemodynamic side effects. CSA caused less events and less hypotensive myocardial ischemia than other anesthetic techniques used in these studies.

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Prevention of infectious complications is essentially based on the respect of a type of surgical asepsis during the introduction of catheters.

The other complication own the RAC is the wrong distribution related to an insertion of a catheter into excessive length of subarachnoid space. Prevention resides on insertion of the catheter maximally 40 mm

and the contact point of the echo - tracking in some patients [19].

The evil sacred distribution; this is the result of a catheter whose end is at the sacral concavity. This situation occurs when the catheter is too advanced and took a caudal direction after having stumbled on the roots of the ponytail. In one patient supine, horizontal table, local anesthetics accumulated in the concavity of the sacrum, causing blockage limited to sacred and lumbar roots [19,20].

The following injections of local anesthetics increasing only very little sensory level which is still above T12. It is this sacred accumulation of local anesthesia that was the cause of syndromes ponytail described in CSA after injection of very high doses of lidocaine [21]. Its prevention is early detection sacred distribution so as not to reach a concentration of local anesthetic nerve at the roots of the ponytail. It should be suspected if a sacred accumulation 10 mg hyperbaric bupivacaine or iso provides a lower block to T12 [14,12,20]. It is then easy to obtain a sensory level widest continuing injection supine but by positioning the table in Trendelenburg and use a hyperbaric solution so that the anesthetic solution is distributed upward. Another measure is to prevent the catheter takes a caudal direction. Using directional bevel needle to Tuohy type used to direct the catheter and getting a cephalic catheter in all cases catheters are not installed by more than 3 cm [21]. Finally the last measure is to achieve the introduction of a patient in lateral recumbency. Indeed with Lateral supine anteroposterior physiological curvatures cannot influence the distribution of local anesthetics [14].

None of these complications were noted in our study.

A perfect hemodynamic stability was provided by the RAC on land in patients at risk [18, 21] makes the anesthetic technique of choice in patients with hip fracture especially when they are very old.

CONCLUSION

This work shows the interest of continuous spinal anesthesia as a good alternative for anesthesia in the elderly, victims fracture of the femoral neck.

It provides good dynamic stability perioperative, with less use of vasoconstrictor; it allows a reduction of postoperative cardiovascular complications in the short and medium term.

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