

Anaesthetic management of hip fracture surgeries in National Hospital of Sri Lanka

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50 patients with hip fractures were audited regarding the anaesthetic management. The practice was compared with the standards set by the Association of Anaesthetists of Great Britain and Ireland. Anaesthetic management was of a satisfactory standard. Awareness of current guidelines, performance of spinal anaesthesia in the lateral position, use of lower limb nerve blocks and management of post-operative complications needed further improvement.

Keywords: Hip fracture, neuraxial block, elderly, opioid

Introduction

Currently, the elderly population composes nearly 25% of the total population and providing health care for them is a challenge. Hip fracture is one of the commonest reasons for a frail, older person to need anaesthesia and surgery¹. Surgical management is the key treatment of hip fracture as it ensures effective analgesia, facilitates rehabilitation and reduces risk of complications related to mobility¹. This audit is an effort to look at our practice and to identify deficits with a view to improve the quality of anaesthesia in Sri Lanka related to hip fracture management.

Back ground

The Anaesthetic Sprint Audit of Practice (ASAP) was conducted throughout United Kingdom to profile individual hospital's compliance with the 12 standards for perioperative care described by Association of Anaesthetists in Great Britain and Ireland (AAGBI). The principal author was fortunate to contribute to this audit by collecting data in her hospital.

Dissanayake and Wijesuriya have previously published an audit of peri-operative management of hip fracture patients at North Colombo Teaching Hospital, Ragama³. Our audit is confined to the anaesthetic management of hip fracture surgeries in theatres.

Method

The audit was conducted in Orthopaedic/Trauma operating theatres of National Hospital of Sri

Lanka (NHSL) from mid-August to end November. Data collection was by a questionnaire designed to get details of anaesthetic practice complying with 12 standards set by AAGBI. Patient details were confined to age and ASA grade. Forms were filled by anaesthetists involved in each case.

Results

Fifty filled forms were obtained.

Patient Population

Age

15 patients were over 80 years, 31 were 60-79 years and 4 less than 60 years.

ASA grade

14 patients were in ASA grade 1, 21 in ASA 2, 14 in ASA 3 and 1 in ASA 4.

Grade and experience of anaesthetist

Anaesthesia was provided mostly by medical officers (43 patients), while 5 registrars, 1 senior registrar and 1 consultant anaesthetised the others. 6 anaesthetists had less than 5 years experience while 24 had 5-10 years, and 20 had more than 10 years' experience.

Anaesthetic technique

None of the patients underwent general anaesthesia, nerve block or epidural block. All patients had sub-arachnoid spinal anaesthesia. Anaesthesia was given in the seated position for 40 patients, lateral position

with fractured side up 2 and 8 with fractured side down.

Only 3 patients had sedation during surgery and all of them had midazolam.

All the patients received 0.5% hyperbaric bupivacaine with 38 receiving 2ml (10mg) or less and 12 receiving more than 2ml together with fentanyl in a dose of 12-25 micrograms.

26 patients received oxygen via face mask while 24 patients did not.

Problems during anaesthesia and surgery

There were 4 cases of documented hypotension (systolic blood pressure less than 80mmHg) and one case of transient arrhythmia which did not require treatment.

There was no evidence of the occurrence of Bone Cement Implantation Syndrome in this audit.

Discussion

We compared our anaesthetic practice with 12 standards set by AAGBI¹. They are as follows.

1. Patients should be anaesthetised by a consultant or specialist with similar clinical experience.
2. Spinal/epidural anaesthesia should be considered for all patients.
3. Spinal anaesthetic should be administered using hyperbaric bupivacaine (< 10mg) with the patient positioned laterally (bad hip down).
4. Co-administration of intrathecal opioids should be restricted to fentanyl.
5. If sedation is required this should be midazolam or propofol.
6. Supplemental oxygen should always be provided.
7. Inhalational agents should be considered for the induction of general anaesthesia.
8. Spontaneous ventilation should be used in preference to mechanical ventilation.
9. Consider intraoperative nerve blocks for all patients undergoing surgery.
10. Neuraxial and general anaesthesia should not be combined.
11. Hypotension should be avoided.
12. Patients should be routinely assessed for the occurrence of Bone Cement Implantation Syndrome

One of the key findings of this audit which deviated from the AAGBI guidelines was that medical officers are the main service provider in anaesthetic management of hip fracture surgery. According to accepted clinical practice in Sri

Lanka, well trained, experienced medical officers anaesthetise for a considerable amount of major surgeries with direct or distant supervision by consultants. It may not be possible to change this practice in the near future.

Considering anaesthetic technique, spinal blockade was, as recommended used in 100% of cases.

Anaesthesia for elderly may require an alteration in technique to take account of age related changes to normal physiology.² Ideally, to make the spinal block optimally effective with a lower dose of drug, patient should be positioned in lateral position with the fractured side down. This in turn minimises systemic side effects such as higher block and cardiovascular instability. However such positioning would be painful and need sedation or fascia iliaca block. Majority of our anaesthetists did not perform neuraxial block in lateral position. Sitting up and staying in that position to have spinal anaesthetic is definitely very distressing for an old patient with a painful hip fracture. For both positions, prior performance of fascia iliaca block, which could be easily given using of land mark technique, will be beneficial. Use of ultrasound, if possible will improve the quality of the block.

The majority of anaesthetists adhered to the recommended dose of hyperbaric bupivacaine and co-administration of fentanyl. The few patients who had sedation received midazolam. Supplementary oxygen is beneficial for old patients undergoing hip fracture surgery (unless contraindicated) to optimise oxygen delivery to tissues. This was not a satisfactory finding in this audit as almost half the patients did not receive it.

Conclusion

According to this audit, anaesthesia for hip fracture surgeries at NHSL is at quite a satisfactory level in keeping with the recommended standards set by AAGBI.

Yet, awareness of current guidelines, improvement of skills in spinal administration in lateral position, performing nerve blocks, recording and treating complications during anaesthesia should definitely be paid more attention.

Recommendations

As the overall improvement in quality of anaesthetic service delivery depends on the knowledge and skills of medical officers in anaesthesia, implementation of regular teaching/training sessions and participation in clinical audits, will be beneficial. All anaesthetists should have an ongoing process of refreshing knowledge on current guidelines and best practice modalities to improve their practice. Implementation of regular appraisal process will help in achieving these targets. Setting up local guidelines for specific practices in anaesthetic management to standardise the practice with our available sources is a timely requirement. These will lead to better performance of anaesthetic service delivery in Sri Lankan health care system.

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