In circulating this information the Department is responding to a request by the Australian and New Zealand College of Anaesthetists, in particular, Dr Roger Goucke (Vice Dean, Faculty of Pain Management, ANZCA, Pain Management Specialist, SCGH and member of ANZCA WA Committee).

This information is for the attention of all anaesthetists in public hospitals of Western Australia.

INTRODUCTION

A spinal haematoma is a rare but potentially catastrophic complication of central neuraxial blockade (CNB). Since the spinal canal is a closed space, uncontrolled haemorrhage from epidural veins or radicular arteries can result in pressures sufficient to cause ischaemic damage to the spinal cord.

Spinal haematoma classically presents with delay in dissipation of block, pain radiating from the site of CNB, bilateral numbness progressing to motor loss, and loss of sphincter control [1]. Magnetic Resonance Imaging (MRI) is the investigative modality of choice for the confirmation of a clinical diagnosis of spinal haematoma [2].

In the largest retrospective review of case reports of spinal haematoma associated with CNB published by Vandermeulen in 1994, the major risk factors were identified as coagulopathy, traumatic puncture, and use of an epidural catheter [1]. The risk of a spinal haematoma complicating an epidural or spinal block is estimated to be about 1: 200,000 [8].

The finding that spinal haematomas occur more frequently in anticoagulated patients is perhaps not surprising, but it does pose a problem for anaesthetists who would see a large overlap between those patients for whom spinal or epidural is considered appropriate and those who require effective thromboprophylaxis perioperatively.

Low dose subcutaneous unfractionated heparin has been widely used for thromboprophylaxis in patients receiving CNB since the early eighties. Because of the short half life of this type of heparin it is widely regarded as safe when considering CNB. The small number of case reports of spinal haematomas appearing in the literature and the failure of a number of studies to show a clinically relevant increase in spinal bleeding in patients undergoing CNB supported this belief [1,3,4,5,6].
The introduction of Low Molecular Weight Heparins (LMWH) for the prevention of deep venous thrombosis and pulmonary thromboembolism, has re-opened the discussion concerning the safety of combining anticoagulants and CNB. Early reviews of the safety of LMWH in Europe where it had been in clinical use since 1987 provided no cause for alarm. Only 3 cases of spinal haematoma associated with CNB in patients receiving LMWH had been reported by 1993. However a further 50 reports surfaced in the United States alone from 1993 to April 1998 causing great concern in the world wide anaesthetic community.

A large number of letters and papers have appeared in the literature over the past 3 years examining the unique pharmacology of LMWH and contrasting the experience with LMWH in Europe and the United States in an attempt to construct safer guidelines for the management of CNB in patients receiving LMWH.

CURRENT PUBLISHED GUIDELINES FOR THE MANAGEMENT OF CENTRAL NEURAXIAL BLOCKADE IN PATIENTS RECEIVING LOW MOLECULAR WEIGHT HEPARINS

Study of the pharmacology of LMWH and analysis of the circumstances surrounding spinal haematoma formation following CNB has led several researchers to publish guidelines for the management of CNB in patients receiving LMWH. The following recommendations are a summary of those published guidelines.

1. Authors from Europe and the United States agree that the smallest effective dose of LMWH should be administered perioperatively. A daily dose 40mg of enoxaparin should not be exceeded and smaller doses (20mg) considered in the elderly [3,7].

2. Single daily dosing is preferable to provide a trough period of anticoagulant activity during which time CNB can be performed or an epidural catheter removed [7].

3. CNB should not be performed within eight to twelve hours of the last s/c dose of LMWH. Subsequent doses should be delayed eight to twenty four hours postoperatively [3,7,8].

4. Epidural catheter removal should occur when anticoagulant activity is low, eight to twelve hours after the last dose of LMWH. Subsequent doses should be delayed four to eight hours. [3,8]

5. The additive anticoagulant effect of other drugs such as aspirin should be considered when assessing a patients suitability for CNB [3,7,8].

6. Epidural catheter use should be avoided if a single shot technique is an appropriate alternative [8].

7. Avoid high dose epidural infusions which may obscure the signs and symptoms of evolving spinal cord compression [8].

8. Potentially difficult CNB should be attempted by experienced anaesthetists only, to reduce the incidence of traumatic procedures.

9. Close postoperative observation is required for signs of spinal cord compression in any patient undergoing CNB. The importance of early diagnosis (MRI), and surgical decompression of a clinically significant spinal haematoma cannot be overstated [9].
REFERENCES


Bryant Stokes

CHIEF MEDICAL OFFICER

No Longer Applicable
Withdrawn June 2016