

blood patch in case of focal neurological signs or in case of severe non-positional headache.

## REFERENCES

1. Bleeker CP, et al. Postpartum post-dural puncture headache: is your differential diagnosis complete? *Br J Anaesth* 2004; 93:461–4
2. Wittmann M, et al. Sinus venous thrombosis: a differential diagnosis of postpartum headache. *Arch Gynecol Obstet* 2012; 285:93–9

SP32

**NEURAXIAL EMERGENCIES: DIAGNOSIS & MANAGEMENT**

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10.1136/rapm-2022-ESRA.35

In rare cases, serious complications occur after neuroaxial anaesthesia procedures. The most serious ones are haematoma, or abscess. Bleeding into the spinal canal caused by central neuraxial blocks (CNB), are rare but potentially tragic complications that may result in permanent paraplegia and urinary and/or rectal incontinence.

Timely detection, targeted diagnostics and rapid therapy prevent permanent damage. This requires certain organizational requirements, which include procedural instructions and interdisciplinary agreements on the management of complications.

Knowing the early symptoms is essential. Early detection and treatment of a haematoma in the spinal canal reduce the risk of permanent spinal cord damage. The presenting symptoms are a result of spinal cord injury or root dysfunction and include paresis, sensory changes or loss of sensation and sphincter dysfunction (urinary or anal). They require immediate neuroradiological diagnostics, such as magnetic resonance imaging, the imaging modality of choice. The most effective treatment is surgical evacuation of haematoma within less than about 6–8 h of appearance of neurologic symptoms, but longer delays do not justify refraining from surgery. Measures that facilitate early detection and treatment of a haematoma include the use of the lowest possible concentration of local anaesthetic, not to manipulate or remove the epidural catheter when antithrombotic drugs are still effective, to assess leg weakness and sensory levels every 4–6 h during on-going epidural analgesia and for at least 24 h after removal of an epidural catheter and stopping epidural infusion after the appearance of new neurological symptoms.

An important point is also thorough knowledge of risk factors. The risk factors may be related to antithrombotic drugs, to patients' co-morbidities and to the number of puncture attempts.

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**PNBS: IMPROVED SAFETY WITH NEEDLE TRACKING AND TISSUE RECOGNIZING TECHNOLOGIES?**

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10.1136/rapm-2022-ESRA.36

The introduction of ultrasound technology into clinical practice over twenty years ago has brought many benefits to regional anaesthesia. Since then, regional blocks have been

used much more frequently. Ultrasound guided regional anaesthesia (UGRA) has improved efficacy and outcome such as accuracy, needling time, block onset, local anaesthetic volumes and block duration. Ultrasound has also made regional anaesthesia safer. The incidence of local anaesthetic systemic toxicity (LAST) was significantly reduced, which is based on the lower volume of the local anaesthetic and the visualization of the spread of the local anaesthetic.

Despite widespread use of ultrasound imaging to guide needle placement, the incidence of transient and permanent nerve damage as a complication of regional anaesthesia has not changed in comparison to nerve stimulation over the last decade. Problems for the anaesthesiologist are the identification of the needle tip before advancing the needle, seeing the needle tip at all times, adjustment of the needle tip, identification of the needle tip before injection, recognition of tissue contact, local anaesthetic spread and intraneural injection.

There is a need for a technology that accurately and reliably identifies the position of the needle tip and that reliably discriminates the nerve structures from other tissue. In recent years, some innovations in the field of needle tip and tissue recognizing technologies have been presented based on measurements of injection pressure, electrical impedance, spectroscopic or elastographic processes. Some of these technologies are still under development, while others are already in clinical use. However, so far there is too little data to conclusively assess whether they have the potential to improve patient safety and change our practice in regional anaesthesia.

Abstract - Basic Cardiac Ultrasound for Anaesthesiologists

Point-of-Care ultrasound (POCUS) has due to the portability, simplicity and excellent image quality of modern ultrasound equipment become a highly relevant skill for all anaesthesiologists to better evaluate patients in the perioperative period and help diagnose and manage relevant complications.

The presentation will demonstrate how ultrasound can be used to answer relevant cardiac focused questions necessary for critical decision-making in the perioperative setting.

Abstract - Lung Ultrasound applied in Perioperative Practice

Point-of-Care ultrasound (POCUS) has due to the portability, simplicity and excellent image quality of modern ultrasound equipment become a highly relevant skill for all anaesthesiologists to better evaluate patients in the perioperative period and help diagnose and manage relevant complications.

The presentation will demonstrate how ultrasound can be used to answer relevant focused questions about the lungs necessary for critical decision-making in the perioperative setting.

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**BASIC CARDIAC ULTRASOUND FOR ANAESTHESIOLOGISTS**

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10.1136/rapm-2022-ESRA.37

Point-of-Care ultrasound (POCUS) has due to the portability, simplicity and excellent image quality of modern ultrasound equipment become a highly relevant skill for all anaesthesiologists to better evaluate patients in the perioperative period and help diagnose and manage relevant complications.

The presentation will demonstrate how ultrasound can be used to answer relevant cardiac focused questions necessary for critical decision-making in the perioperative setting.