The effect of patient positioning during lengthy surgery on postoperative health

A patient’s position during lengthy surgery can cause serious and long lasting complications but these can be averted by good postoperative care.

During the acute pain team ward round, David Green, a 53 year old man receiving epidural analgesia, reported sensory loss and pins and needles in both hands. He also complained of severe left calf swelling and pain. Mr Green had undergone a low anterior resection and creation of a temporary defunctioning loop ileostomy eight hours before the ward round. He reported experiencing calf pain straight after the surgery and the pins and needles a few hours after surgery.

When we reviewed him the following day Mr Green reported no pain at the wound site, had no motor block in both legs but had limited flexion and extension of the left ankle. He reported severe pain in the left calf, pins and needles in the left foot and pins and needles in both hands.

A Doppler scan showed some inflammation of the muscle bellies but no deep vein thrombosis or haematoma. Mr Green had a very unusual group of symptoms that we have not previously come across.

Epidural analgesia can cause sensory and motor changes but these should not affect the upper limbs. Unusual distribution of sensory changes, inability to flex and extend the ankle and severe calf pain did not seem to be connected to the epidural analgesia.

The epidural had been inserted while Mr Green was still awake and no complications had been reported. However, due to the complexity of these symptoms, the epidural was stopped for a few hours until he reported mild/moderate pain. There were no changes to the sensory loss or pins and needles so the epidural infusion was restarted as this was not felt to have been the cause. Mr Green was unable to weight bear and needed help to mobilise.

On the second day postoperatively, he was able to weight bear fully, but still reported moderate calf pain and pins and needles in both hands. On closer examination we noted bruises around both ankles. All distal pulses in hands and feet were present and Mr Green had a normal capillary refill time. His wound pain was well controlled with the epidural analgesia.

**INVESTIGATION**

The preliminary diagnosis was that Mr Green had an inflammatory reaction secondary to pressure from lying in one position for a long period during surgery. On further examination it was noted that he had developed a bruise behind his left knee. This was thought to be due to the stirrups and his positioning during surgery, which had lasted for some 7.5 hours. During this time he was in the lithotomy position.

The lithotomy position is commonly used for surgical procedures and examinations involving the pelvis and lower abdomen as it provides good visual and physical access to the perineal region. However, some studies have reported a significant association between long periods in surgery with the patient in the lithotomy position and circulatory complications such as compartment syndrome (Cohen and Hurt, 2001; Anema et al, 2000). Compartment syndrome is an acute medical condition occurring usually after injury, surgery or extensive repetitive muscle use, in which increased pressure, caused by inflammation, within confined body space impairs blood supply. This may lead to nerve damage and muscle death if it is not recognised and promptly treated. It is, therefore, important to be aware of the physical risks to patients that the lithotomy position may pose for prolonged surgical procedures.

Acute compartment syndrome is a medical emergency requiring urgent surgical treatment, known as fasciotomy, to allow the pressure to return to normal (Salcido and Lepre, 2007).

In this situation the lithotomy positioning in theatre had caused the pins and needles and sensory loss. Fortunately, Mr Green did not develop compartment syndrome and no further treatment was required. He had daily physiotherapy and the situation was left to resolve itself.

Mr Green was discharged six days after surgery, he regained full movement in his left leg 1.5 weeks after discharge and the calf pain resolved. He was, however, still experiencing altered sensation at the tips of his fingers even one month after his surgical procedure.

**RECOMMENDATIONS**

It is important to be aware of potential risk factors associated with the length of surgery and perioperative positioning as this can have potentially damaging and long lasting effects on a patient. If your patient has epidural analgesia, it is important to do the following:

- Perform a thorough physical assessment;
- Pay particular attention to sensory and motor block and pain;
- Be vigilant if they begin displaying unusual symptoms such as pins and needles or numbness in their arms or legs.

*The patient’s name has been changed*

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**REFERENCES**

