Persistent Post Surgical Pain: Risk Factors and Prevention

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The development of persistent pain subsequent to surgery and trauma is a common, but widely underestimated problem. Depending on the site and type of surgery the incidence of any persistent pain can be in the range of 5 to 80%; severe pain can occur in up to 10% of cases(1). As this has significant implications for the life of patients affected, informed consent for surgery should mention this complication.

The pain experienced is often neuropathic in nature and it is therefore not surprising that surgery with a high likelihood of accompanying nerve injury carries the highest risk of persistent pain (amputation, thoracotomy, mastectomy, herniorrhaphy)(2). Other risk factors here are repeat surgery and concomitant chemo- or radiotherapy. Psychosocial risk factors are depression, psychological vulnerability, stress, and late return to work(3). An inefficient endogenous analgesia system, as measured by diffuse noxious inhibitory control (DNIC) or other techniques (thermal pain or mechanical temporal summation), is another factor identifying patients at increased risk(4). The severity of acute postoperative pain is a strong predictor of persistent pain development; however if this is related to poor postoperative analgesia or dependent on other factors mentioned here, is not resolved.

There is currently only limited data to show a preventive effect of certain anaesthetic or analgesic techniques or specific drugs. Overall, it seems that techniques of regional anaesthesia and analgesia (peripheral nerve blocks, neuraxial techniques) reduce the incidence of persistent post surgical pain in a number of settings (amputation, thoracotomy, colectomy, hysterectomy, mastectomy etc.). Pharmacological interventions with a preventive effect seem to be the perioperative use of NMDA receptor antagonists (ketamine) and alpha-2-delta modulators (gabapentin, pregabalin)(5).

Future research in this area needs to focus on the preoperative identification of patients at increased risk and the development of preventive psychological, anaesthetic and analgesic strategies to reduce the incidence and severity of persistent post surgical pain.

Selected References:

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