

Poloha na boku a implikace pro anesteziologa

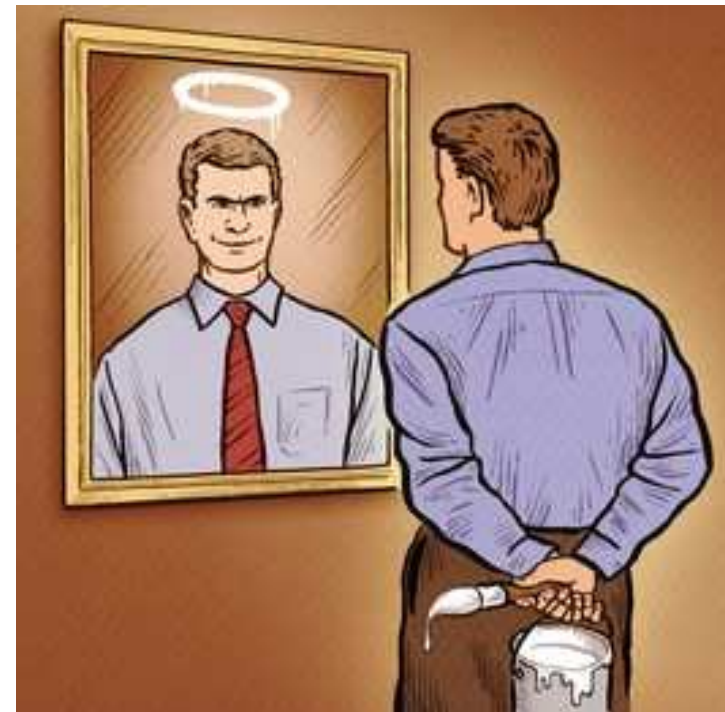
MUDr. Josef Škola



KLINIKA ANESTEZIOLOGIE, PERIOPERAČNÍ
A INTENZIVNÍ MEDICÍNY UNIVERZITY J. E. PURKYNĚ
MASARYKOVA NEMOCNICE V ÚSTÍ NAD LABEM, O. Z.

Conflict of interest..

- žádný



O čem to bude..

Poloha na boku a:

- EBM
- fyziologie
- poškození nervů
- rhabdomyolýza
- výhody v porovnání s jinými polohami
- správné provedení

- Article types
 - ✓ Clinical Trial
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EBM ?

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Kim SH, Choi YS, Lee JG, Park IH, Oh YJ.
Anaesth Intensive Care. 2012 Nov;40(6):1016-22.
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Nishi M, Usukaura A, Kidani Y, Tsubokawa T, Yamamoto K.
J Cardiothorac Vasc Anesth. 2006 Oct;20(5):656-8. Epub 2006 Aug 8.
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Biswas BK, Agarwal B, Bhattacharyya P, Badhani UK, Bhattarai B.
Br J Anaesth. 2005 Nov;95(5):715-8. Epub 2005 Sep 2.

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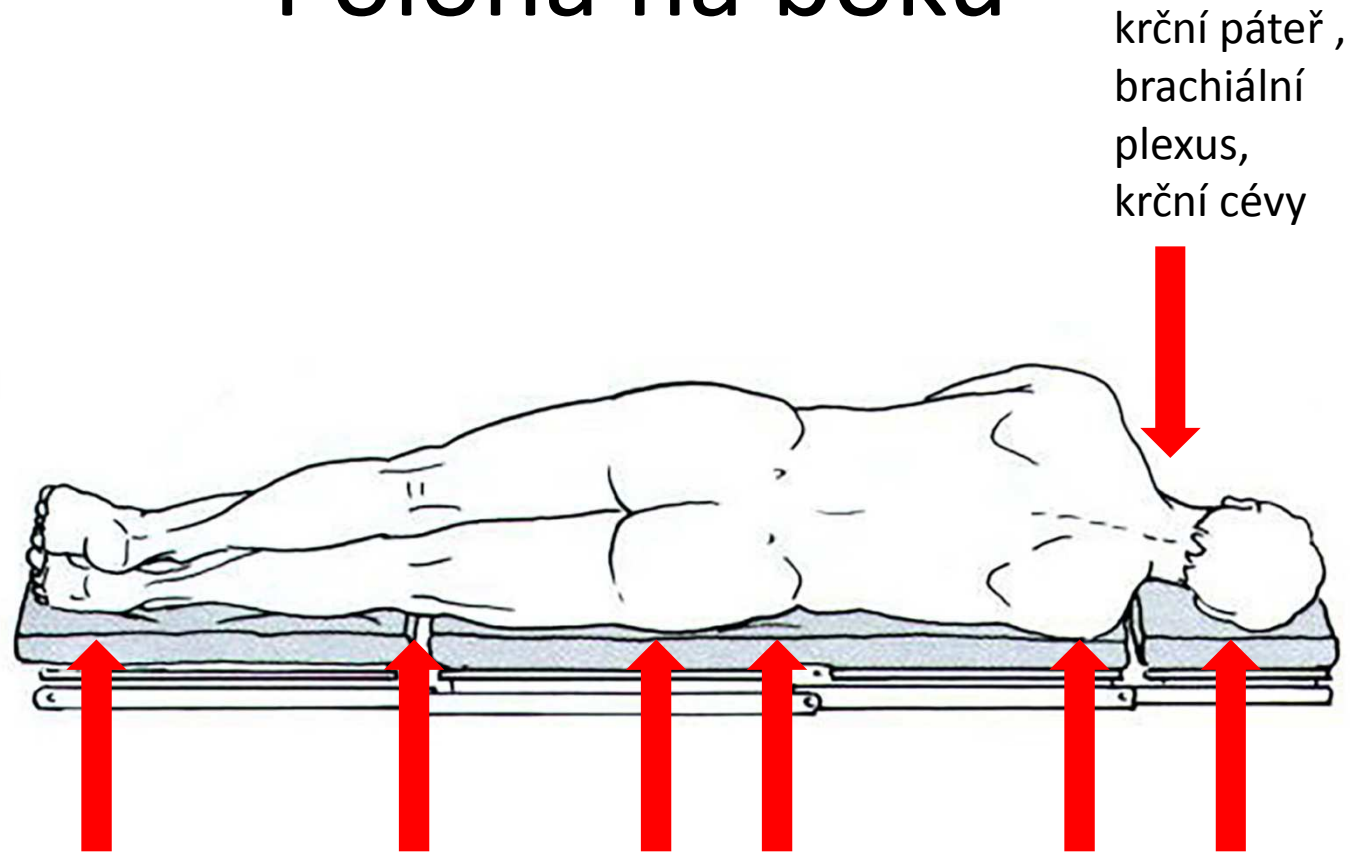
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Poloha na boku



krční páteř ,
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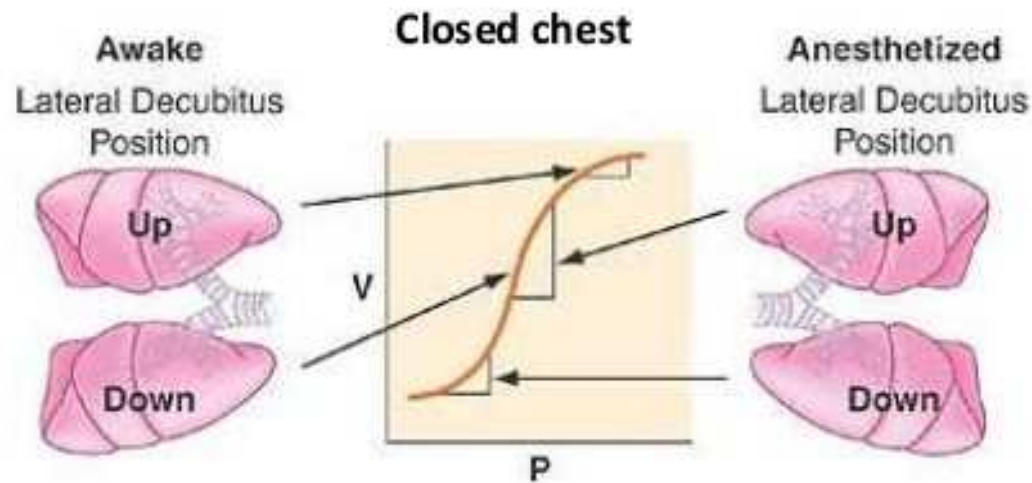
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Ventilace v poloze na boku



Při vědomí, spontánně ventilující → převaha ventilace „spodní“ plíce.

Celková anestezie, UPV → převaha ventilace „horní“ plíce → **V/Q nepoměr** (převaha perfúze dependentní plíce).

Systemový oběh

British Journal of Anaesthesia 84 (6): 753–7 (2000)

Haemodynamic effects of the lateral decubitus position and the kidney rest lateral decubitus position during anaesthesia

We measured the haemodynamic effects of changing from the supine position to the lateral decubitus (lateral) position, and then to the kidney rest lateral decubitus (kidney) position in 12 patients undergoing nephrectomy under isoflurane anaesthesia. Eight control patients

undergoing pulmonary surgery remained in the lateral position. The lateral position produced no significant changes. In the kidney position, however, significant reductions occurred in the mean arterial ($P < 0.01$), right atrial ($P < 0.05$) and pulmonary artery wedge pressures ($P < 0.01$). There were also significant reductions in cardiac index (from 3.04 (SD 0.21) to 2.44 (0.26) litre $\text{min}^{-1} \text{m}^{-2}$, $P < 0.01$) and stroke volume index (from 40 (5) to 31 (5) ml $\text{beat}^{-1} \text{m}^{-2}$, $P < 0.01$).

Br J Anaesth 2000; 84: 753–7



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Br J Anaesth 2000; 84: 753-7



→ žádné změny..



- snížený žilní návrat
- snížený tepový objem
- zvýšení systémové rezistence
- pokles srdečního výdeje
- pokles TK



Contents lists available at ScienceDirect

Best Practice & Research Clinical Anaesthesiology

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Closed claims' analysis

Julia Metzner, MD, Assistant Professor^a, Karen L. Posner, PhD, Research Professor^b, Michelle S. Lam, BS, Research Study Assistant^c, Karen B. Domino, MD, MPH, Professor^{*}

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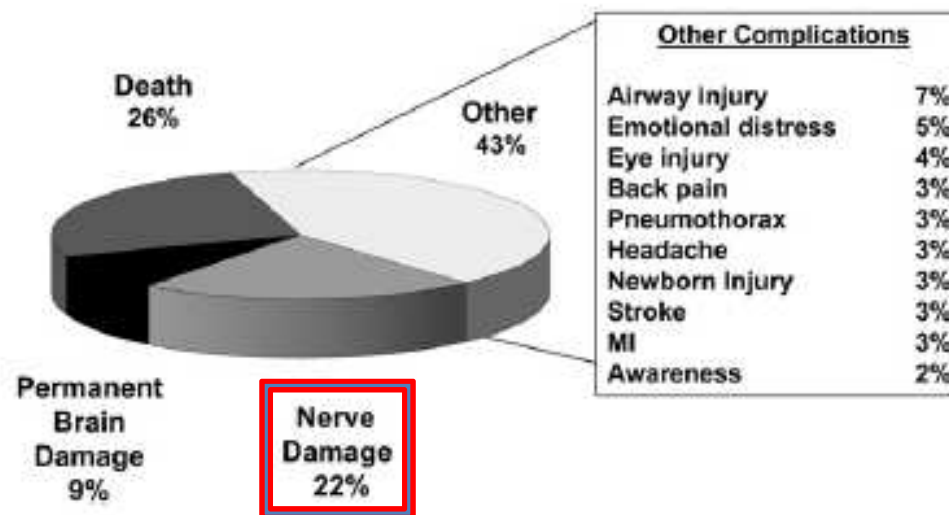
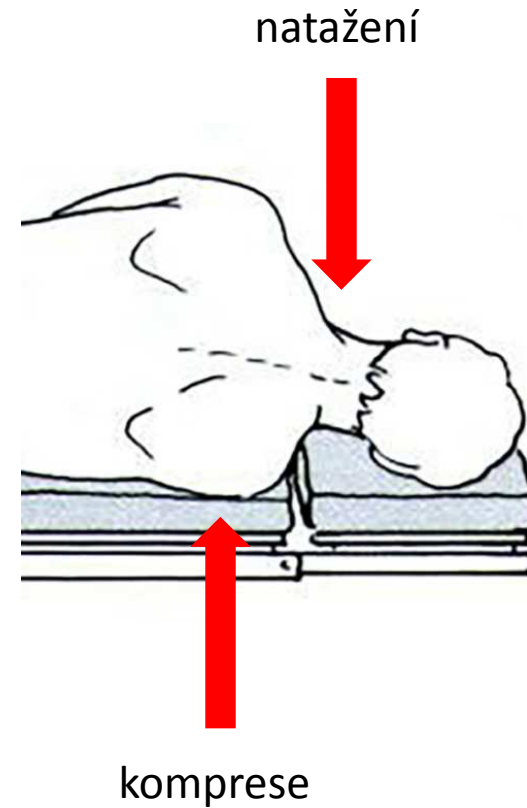
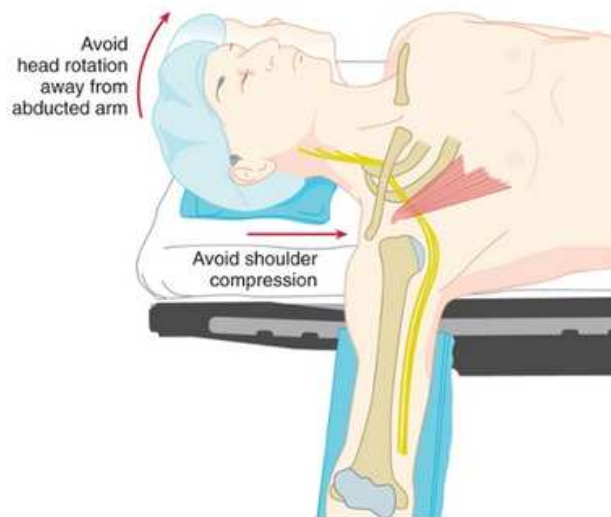


Fig. 2. Most common complications 1990 or later (n = 5230).

Brachiální plexus

- pevná fixace mezi krční obratle a axilární fascii
- riziko natažení nebo komprese
- manifestace nejčastěji v oblasti n. ulnaris



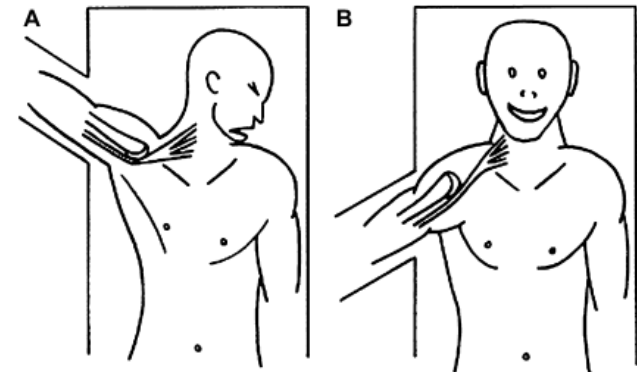
Příčiny poranění brachiálního plexu

Dependentní končetina (komprese)

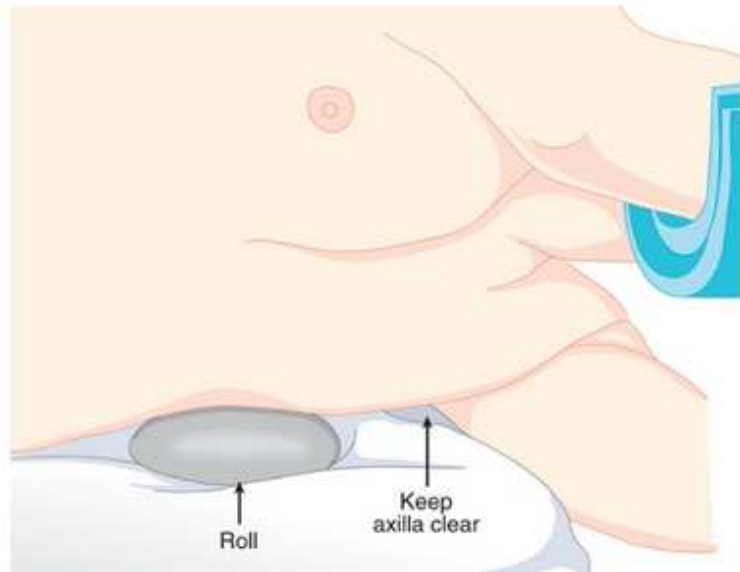
- končetina přímo pod hrudníkem
- krční žebro
- tlak na rameno směrem dolů
- malpozice podložení hrudníku

Non-dependentní končetina (tah)

- kontralaterální flexe hlavy
- abdukce končetiny $>90^\circ$
- úprava polohy těla („převalení“) po fixaci horní končetiny



Brachiální plexus – prevence poškození



- vypodložení hrudníku („axillary“ roll)
- hlava v neutrální poloze
- abdukce v rameni maximálně 90°
- monitorace SpO₂ na dependentní končetině (detekce komprese nervově-cévního svazku)

Nervus radialis

Anaesthesia, 2005, 60, pages 602-604

CASE REPORT

Radial nerve injury after general anaesthesia in the lateral decubitus position*

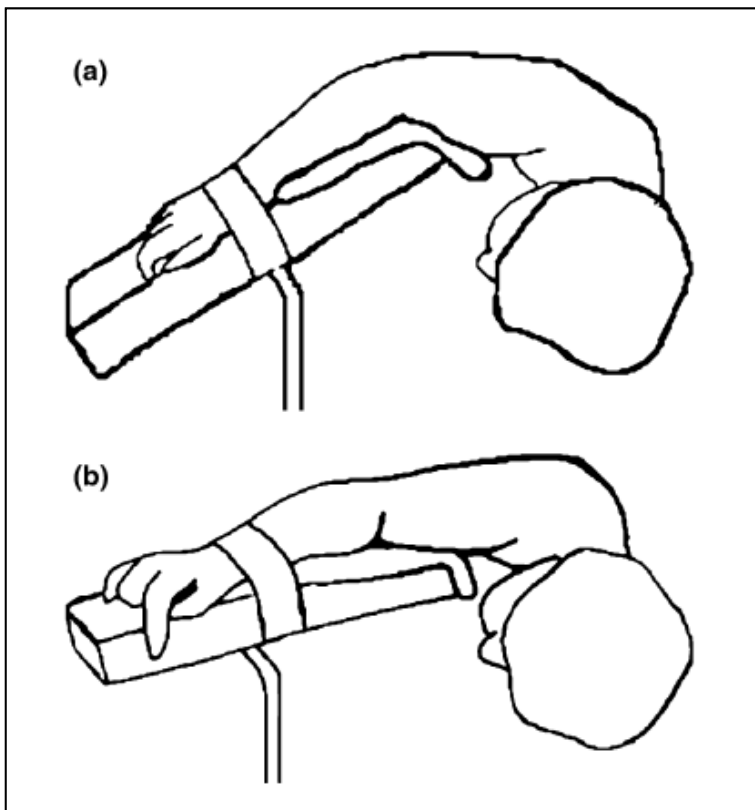


Figure 1 a) The edge of the armboard can create excessive compression of the radial nerve at the posterior aspect of the humerus due to improper setting. b) Appropriate positioning of the arm board can avoid this problem.

Rhabdomyolýza

Elevated serum creatine kinase after neurosurgeries in lateral position with intraoperative neurophysiological monitoring is associated with OP duration, BMI and age

[Marian C. Neidert](#)¹, [Marco Losa](#)¹, [Luca Regli](#), [Johannes Samthein](#)  

¹ These authors contributed equally.

Accepted: December 27, 2014; Published Online: January 13, 2015

Highlights

- Risk factors for excess creatine kinase after neurosurgery are lateral positioning and the absence of muscle relaxants, and (as shown here) long surgery, high BMI and young age.
- Intraoperative stimulation of Motor Evoked Potentials did not cause further elevation of creatine kinase.
- We did not observe impaired renal function.

Rhabdomyolysis: another complication after prolonged

summary

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DOI: ht

We present the case of a young patient who underwent a prolonged urological procedure in the lateral decubitus position. The patient's postoperative course was complicated by rhabdomyolysis manifested by elevated levels of serum creatine phosphokinase and the presence of myoglobin in urine and blood. To prevent renal failure, we managed the patient in the intensive care unit with generous volumes of intravenous fluids, forced diuresis, and urine alkalization. Subsequently, the patient had an uneventful recovery. The linkage between surgical positioning, prolonged surgery time, and rhabdomyolysis is discussed.

Anaesthesia, 1991, Volume 46, pages 141–143

Summary

L.
31-F

Rhabdomyolysis during routine surgery was studied in three groups of patients who had surgery, with limited trauma to muscle, in the lateral and supine positions, and prone on the spinal frame. A range of blood tests was performed (before surgery, and on the first, third and seventh day after operation). These showed that a creatine kinase increase in the 24 hours and the early appearance of myoglobin in the serum were the best indicators. Rhabdomyolysis was associated with the lateral position and long lasting surgery. No blood test before surgery was of any predictive value.

Anesthesiology
1996; 84:727–9
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Lippincott–Raven Publishers

Rhabdomyolysis

Donald D. Mat

groin.¹⁻² We report a case of rhabdomyolysis occurring solely from the direct and prolonged pressure of the operating room bed against the gluteal and flank muscles in a patient in the lateral decubitus position.

Výhody vs. beach-chair position

Arthroscopy. 2014 Nov;30(11):1520-7. doi: 10.1016/j.arthro.2014.05.042. Epub 2014 Aug 6.

Cerebral oxygenation using near-infrared spectroscopy in the beach-chair position during shoulder arthroscopy under general anesthesia.

Pant S¹, Bokor DJ², Low AK³.

CONCLUSIONS: There remains a paucity of high-level data. The mean incidence of CDEs was 28.8%. We found a strong positive correlation between CDEs and degree of elevation in the BCP (P = .056). ~~Emerging evidence (Level IV) suggests~~ that we may be able to stratify patients on the basis of age, history of hypertension and stroke, body mass index, diabetes mellitus, obstructive sleep apnea, and height. The challenge remains, however, in defining the degree and duration of cerebral desaturation, as measured by NIRS, required to produce measureable neurocognitive decline postoperatively.

- 30% anestezií v beach-chair position při artroskopii ramene spojeno s epizodami poruchy oxygenace mozku dle NIRS nebo SjvO₂.
- riziko permanentního neurologického deficitu

Výhody vs. beach-chair position

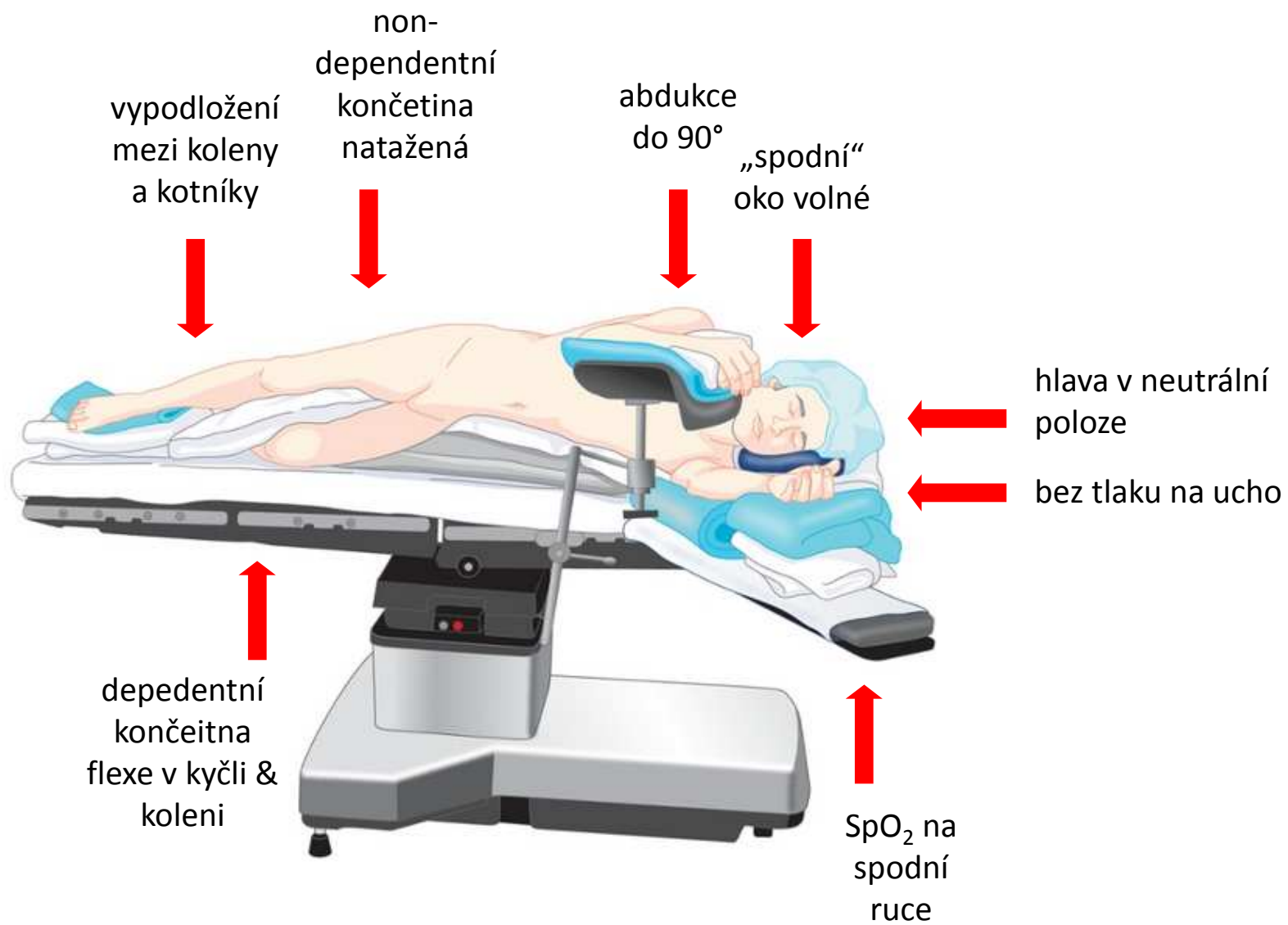
Anesth Analg. 2010 Aug;111(2):496-505. doi: 10.1213/ANE.0b013e3181e33bd9. Epub 2010 May 27.

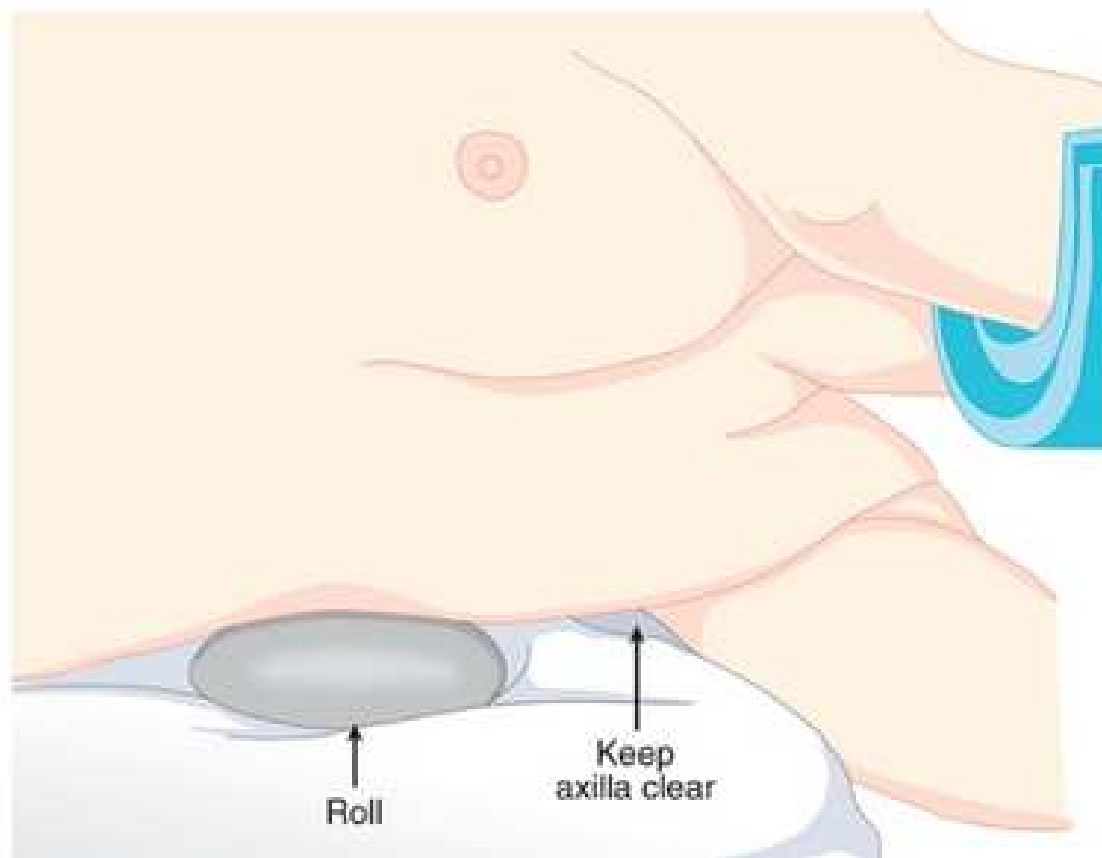
Cerebral oxygen desaturation events assessed by near-infrared spectroscopy during shoulder arthroscopy in the beach chair and lateral decubitus positions.

Murphy GS¹, Szokol JW, Marymont JH, Greenberg SB, Avram MJ, Vender JS, Vaughn J, Nisman M.

RESULTS: Anesthetic management was similar in the BCP and LDP groups, with the exception of more interscalene blocks in the LDP group. Intraoperative hemodynamic variables did not differ between groups. *Sev(2)* values were lower in the BCP group throughout the intraoperative period ($P < 0.0001$). The incidence of CDEs was higher in the BCP group (80.3% vs 0% LDP group), as was the median number of CDEs per subject (4, range 0-38 vs 0, range 0-0 LDP group, all $P < 0.0001$). Among all study patients without interscalene blocks, a higher incidence of nausea (50.0% vs 6.7%, $P = 0.0001$) and vomiting (27.3% vs 3.3%, $P = 0.011$) was observed in subjects with intraoperative CDEs compared with subjects without CDEs.

- žádné zaznamenané epizody poruchy oxygenace mozku v poloze na boku..





↑
vypodložení
hrudníku

↑
axila volná

bod flexe
pod lopatou
kyčelní



Implikace pro anesteziologa..

Poloha na boku =

- nepoměr V/Q během anestezie
- negativní vliv lumbotomické polohy na oběh
- riziko poranění brachiálního plexu
- riziko rhabdomyolýzy u dlouhých výkonů
- minimální riziko poruchy oxygenace mozku v porovnání s beach-chair position

HOW YOU SLEEP MAY ACTUALLY REDUCE YOUR RISK OF BRAIN DISEASE (SLEEP IN THESE POSITIONS INSTEAD)

Sharing is caring!



Getting a good night's sleep is pivotal for our health, body, mood, and mind, especially since we spend one-third of our lives sleeping. Body position plays an important role while we sleep, and researchers say there's an optimal sleeping position for brain health, and the good news is that it's incredibly common.

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Děkuji za pozornost

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