IATROGENIC PNEUMOCEPHALUS AND HYPERBARIC OXYGEN THERAPY

A CASE REPORT

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BACKGROUND

Pneumocephalus is a rare but potentially serious complication of epidural block. Hyperbaric oxygen therapy (HBOT) accelerates the air absorption in patients with persistent and symptomatic pneumocephalus, leading to clinical and radiological improvement.

CASE-REPORT

Male
79 years old
ASA III

- Renal carcinoma
- Hypertension
- Congestive cardiac insufficiency (NYHA II)
- Ischemic heart disease
- Paroxysmal Atrial Fibrillation
- Multifactorial anemia
- COPD

Surgical Procedure

Left radical nephrectomy
Transurethral resection of bladder

Informed consent obtained

INTRAOPERATIVE

Combined anesthesia

→ **Lumbar epidural + General Anesthesia**

*Standard ASA +
invasive arterial
pressure monitoring*

- ✓ 1st attempt: L3-L4 with loss-of-resistance to saline technique => **accidental dural puncture**
- ✓ 2nd attempt: The catheter was then placed at L4-L5 with loss-of-resistance to air technique
- ✓ It was used intraoperatively without complications

2,5 hours surgery without any other complication

POSTOPERATIVE

The patient was admitted in the IMCU, **stable and without neurological signs**.

Epidural infusion was started using a 50mL infusion syringe system with 1,3mg/mL levobupivacaine and 40mcg/mL morphine at 2mL/h.

2H after surgery

Confusion/agitation (RASS+2), vertical nystagmus and paraparesis (RIM2, LIM1)

PNEUMOCEPHALUS

HBOT

After treatment

Total resolution of deficits.
Discharged on the 7th postoperative-day.

DISCUSSION

The presence of air in the intracranial cavity is called pneumocephalus and it is usually caused by trauma, surgery procedures or during neuroaxial approaches.

Loss-of-resistance to air technique increases the likelihood of pneumocephalus in case of accidental dural puncture.

HBOT has been successfully used as a treatment for symptomatic pneumocephalus, shortening the length of hospital stay and decreasing the incidence of meningitis.

In this case report one single session of HBOT lead to radiological improvement and clinical resolution.