Hepatic Abscess Drainage under Thoracic Epidural Anesthesia using Intravenous (I.V.) Dexmedetomidine

*Koufopoulou C., Korakis A., Lasda E., Chatzimihail M., Charalampidou A., Arnaoutoglou E.
University Hospital of Larissa, Greece*

BACKGROUND

Hepatic abscesses are extremely morbid.

When dorsally located (*high risk of intestinal perforation if percutaneously drained*) and large (>5 cm in diameter), open surgical drainage under general anesthesia is necessary.

CASE REPORT

A 70-year-old man was admitted to our General Surgery Department, with the diagnosis of a hepatic abscess.

Patient History:

Severe COPD	Alcohol Consumption
CAD	Minimum Physical Activity
BMI 30 kg/cm ²	No known allergies
No previous operations/ anesthesia	No medical observation Low adherence to treatment

ABGs	pH:	HCO ₃ ⁻ :	pO ₂ ⁻ :	pCO ₂ ⁻ :
	7,53	29mmol/l	58 mmHg	35mmHg
ECG	Q-wave in leads V ₂ -V ₄ , aVL and I			
Echocardiogram	LVH, hypokinetic IVS& apex, EF: 35%			
Spirometry	FEV ₁ =48% of predicted			
Upper Abdominal CT	7,5cm lesion hepatic lobes 5 & 6			

PREOPERATIVE EVALUATION

Diffuse wheezing, Prolonged expiration
HR 70bpm, BP 130/70 mmHg, SpO₂ 90%/FiO₂ 21%
RR 15/min, BT 36,8°C

Thoughts on Anesthetic Plan...

General anesthesia

± Epidural analgesia

OR

Epidural Anesthesia

OR

Epidural Anesthesia

PLUS Conscious Sedation

- **HIGH RISK FOR POSTOPERATIVE PULMONARY COMPLICATIONS**

- **Sufficient or not?**

- **Dexmedetomidine**

ANESTHETIC TECHNIQUE

Monitoring (SpO₂-IBP-ECG)

Nasal cannula 3l/min O₂

Epidural Catheter (T7-T8)

Intermittent epidural infusion:

10 ml ropivacaine 0,75% +

1 ml fentanyl 0,05mg

(total within 10')

Continuous I.V. infusion:

dexmedetomidine 1mcg/kg/h

INTRAOPERATIVE COURSE

Sensory Block Level T4-L2

Ramsay Sedation Scale 4

Patient & Surgeon Satisfaction High

No serious adverse respiratory or cardiovascular events

ABGs pH: 7,50, pO₂: 94mmHg

pCO₂: 40 mmHg

POSTOPERATIVE ANALGESIA

Epidural catheter

Continuous infusion 6ml/h:

ropivacaine 1mg/ml+ fentanyl 2mcg/ml

+ PCA 2ml bolus (lockout time 30')

Patient calm and pain-free (NRS<3)

Mobile 36h post-op

Catheter removed on day 2

Discharged on day 5

DISCUSSION

Epidural anesthesia has been shown to reduce postoperative pulmonary complications¹ (PPCs) and to be safe to use in a hepatectomy under conscious sedation.²

Dexmedetomidine³ reduces stress during surgical procedures under regional anesthesia.

In our case, the patient's severe COPD, an independent risk factor for the development of PPCs, was the main reason to perform this anesthetic technique.

Learning points:

- This is the first reported case of upper abdominal surgery under epidural anesthesia and I.V. dexmedetomidine
- It should be clear that this technique, even if performed by anesthetists experienced in regional anesthesia, cannot be considered as a first choice for this kind of surgery.
- Nevertheless, it may be suitable in patients with impaired respiratory function who are in elevated risk for PPCs.

REFERENCES

- 1.Lawrence VA, Cornell JE, Smetana GW. Strategies to Reduce Postoperative Pulmonary Complications after Noncardiothoracic Surgery: Systematic Review for the American College of Physicians. *Ann Intern Med.* 2006; **144**:596–608
- 2.Yamamoto K, Fukumori D, Yamamoto F, Yamamoto M, Igimi H, Yamashita Y. First report of hepatectomy without endotracheal general anesthesia. *J Am Coll Surg.* 2013; **216**:908–914
- 3.Song J, Kim WM, Lee SH, Yoon MH. Dexmedetomidine for sedation of patients undergoing elective surgery under regional anesthesia. *Korean J Anesthesiol* 2013; **65**:203-8