

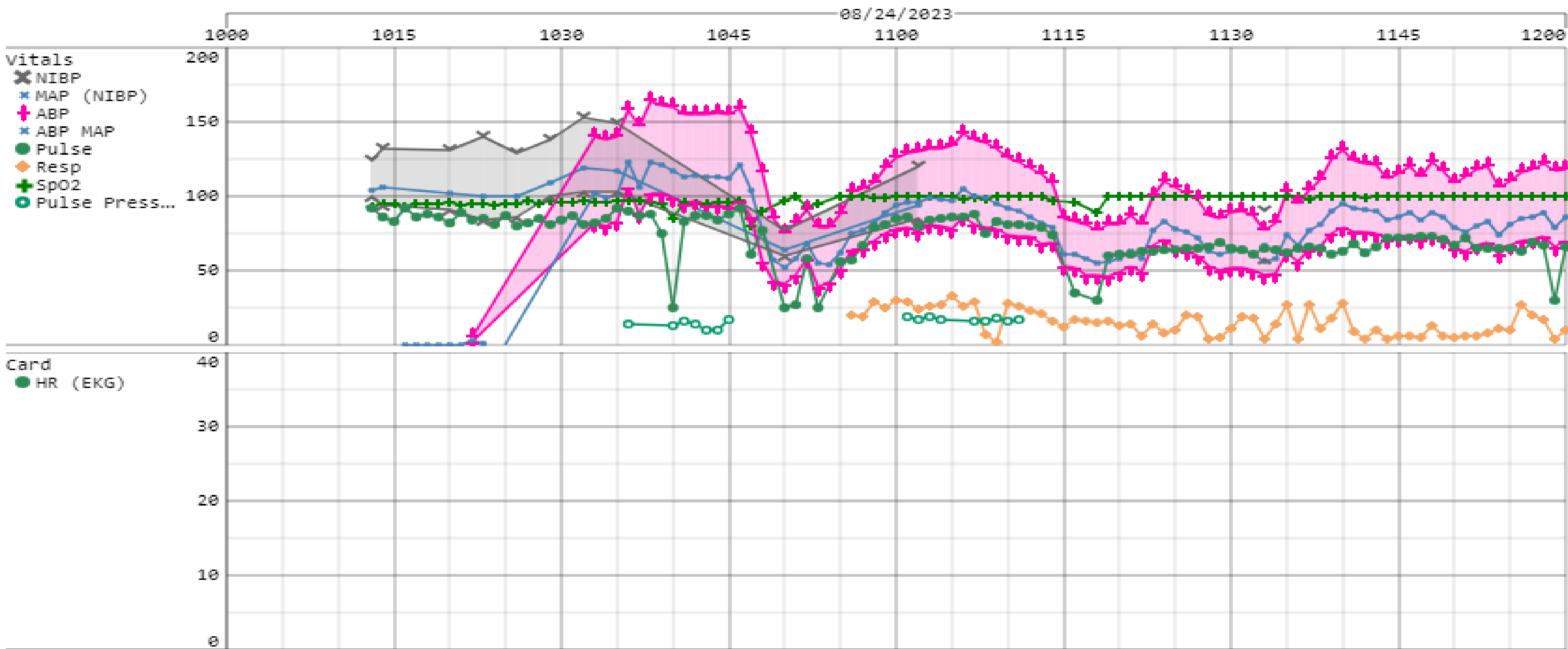
Introduction & Background

- Intrathecal catheters are essential in modern anesthesia and pain management, enabling targeted drug delivery while minimizing systemic side effects.
- Advantages include stable hemodynamics, avoidance of airway manipulation, and effective pain control, all while allowing for lower medication doses in comparison to general anesthesia.

Case Report

- A 67-year-old male, with a BMI of 34.82 kg/m2 (1.72m and 103.9kg), ASA 4, with a past medical history of obstructive sleep apnea, cerebrovascular accident, exercise intolerance (<4 METS), hypertension, myocardial infarction, coronary artery disease, and congestive heart failure with an ejection fraction of 21% presented for a hip replacement.
- Continuous spinal anesthesia was selected due to his heart failure and obstructive sleep apnea, with informed consent obtained. The procedure involved inserting an epidural catheter at the L2-3 interspace, administering 1 ml of 0.5% bupivacaine, and monitoring blood pressure with intravenous norepinephrine support.
- The surgery lasted 135 minutes, during which the patient maintained stable vital signs and spontaneous respiration. Despite a significant drop in systolic blood pressure, effective volume expansion was achieved. Postoperatively, the patient was alert, moving all extremities, with stable vital signs and no complications reported, demonstrating a satisfactory recovery.

O2	(L/min)	[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]
Air	(L/min)	[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]
N2O	(L/min)	[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]
iN2O	(%)				[0]	[0]	[0]	[0]	[0]
fentanyl1 50 ...	(mcg)						15		
Midazolam 1 m...	(mg)	[2]							
propofol (DIP...	(mg)						10	5	
Phenylephrin...	(mcg)				100				
Ephedrine 50 ...	(mg)								
bupivacaine (...)	(mg)		5	2.5		2.5			
Norep... (mcg/kg/min)				[0.01]	[0.01]	[0.02]	[0.08]		
Tranexamic AC...	(mg)				1000				
ceFAZolin (AN...	(mg)			2000					
dexmed... (mcg/kg/hr)				0.7	1	0.9	0.5	0.4	
Dexmedetomid...	(mcg)				4				
Fentanyl1 50 ...	(mcg)					25			
Ephedrine 50 ...	(mg)								
Lactated Ring...	(mL)	/							
Lactated Ring...	(mL)			/					
Urine output	(mL)						200		
EBL	(mL)								
Minute volume	(L)			[0]					
eO2	(%)			[90]	[58]	[90]	[66]	[98]	
ico2	(mmHg)			[0.3]	[0.1]	[0.1]	[1.1]	[0]	
EKG				[NSR]	NSR	[NSR]	NSR	[NSR]	
Vent Mode		Man./Spont.	Man./Spont.	[Man./Spont.]	Man./Spont.	[Man./Spont.]	Man./Spont.	[Man./Spont.]	
Temperature					[32.9]	[35.6]	[36.9]	[37.4]	
ETCO2	(mmHg)			[7]	[19]	[9]	[31]	[0]	
FIO2	(%)			[46]	[96]	[91]	[45]	[98]	
ST (Ii)	(mm)			[0]	[0]	[0.2]	[0.3]	[0.2]	
ST (IVS)	(mm)	1000	1015	1030	1045	1100	1115	1130	1145
ST (V6)	(mm)								



Discussion

- Continuous spinal anesthesia provided effective pain control and stable hemodynamics during the procedure, with the patient tolerating the surgery well and experiencing no complications related to the anesthesia technique.
- Regional anesthesia is often preferred for orthopedic surgeries, especially hip replacements, as it may reduce postoperative opioid use. While some studies indicate no significant difference in mobility or hospital stay between catheter-based analgesia and single-shot blocks, patients receiving only catheter analgesia often require more morphine.
- Continuous spinal anesthesia allowed for selective timing of drug delivery, bypassing the blood-brain barrier and minimizing systemic side effects.
- Our approach, using intravenous tramadol, fentanyl, and catheter-administered bupivacaine, achieved satisfactory analgesia without increasing the risk of postoperative nausea and vomiting or respiratory depression.

Conclusions

- This case illustrates the importance of individualized anesthetic planning in patients with severe comorbidities.
- Continuous spinal anesthesia provided a stable and effective option for managing a high-risk cardiac patient.
- Further research is warranted to evaluate catheter use in lower limb surgeries for high-risk patients.