Background

- Recurrent syncope in younger adults → often conduction disturbances (e.g., complete AV block)- Significantly affects quality of life.
- Micra leadless pacemaker → world's smallest pacemaker; minimal leads, no subcutaneous generator pocket.

Rationale for Leadless Pacemaker:

- Reduced risk of lead-related complications.
- Potentially favorable for younger patients with intermittent conduction issues.

Obstetric Implications:

- Limited data on managing pregnancy and anesthesia in patients with leadless devices.
- Hemodynamic stability and electromagnetic interference (EMI) are key concerns

Case

Patient Profile:	31-year-old, G3P1 with history of recurrent syncope. Prior C section. Complete heart block documented (35-second pause), normal cardiac structure.
Implantation & Pregnancy Course:	Micra leadless pacemaker implanted → resolved syncopal episodes. Stable pregnancy; at 38 weeks, planned cesarean delivery under spinal anesthesia.
Intraoperative Management:	**Monitoring**: Stable sinus rhythm throughout; no device interference. **No Device Reprogramming**: Adequate battery status & programmed mode confirmed pre-op. **Outcome**: Uncomplicated procedure, stable maternal hemodynamics, healthy neonate.

Teaching points

Advantages of Micra Pacemaker:

- No subcutaneous pocket or leads → fewer lead-related issues, smaller device size.
- In younger patients with vasovagal-related AV block, the need for lifelong pacing may decrease as the conduction abnormality improves over time

Long-Term Challenges:

- Battery depletion → device not typically extracted; multiple implants can lead to RV damage. Up to three or four Micra devices may be safely implanted sequentially, though this may increase the risk of right ventricular damage and suboptimal placement due to limited anatomical space.

Perioperative Considerations:

- **Preoperative Device Assessment**: Confirm battery status, pacing thresholds, programmed mode.
- **Minimize EMI**: Use bipolar electrocautery or minimize monopolar use with a distally placed grounding pad.
- **Monitoring**: Continuous ECG and close hemodynamic monitoring.

Conclusion:

- **Safe Use of Spinal Anesthesia**: Demonstrated in this case with micra pacemaker.
- **Research Gaps**: More data needed on optimal management protocols and future replacement strategies for leadless pacemakers, especially in younger population.