



Navigating Labor Analgesia in SAPHO Syndrome: A Case of Intrathecal Pump Associated Complexity

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Background

- Pain management during labor is inherently complex, requiring careful consideration of maternal comfort, fetal well-being, and the dynamic physiology of pregnancy.
- Challenges are amplified in parturients with chronic pain syndromes, opioid tolerance, or contraindications to neuraxial anesthesia, where standard labor analgesic strategies may be unavailable or ineffective.
- SAPHO syndrome is an uncommon autoinflammatory disorder characterized by:
 - Synovitis
 - Acne
 - Pustulosis
 - Hyperostosis
 - Osteitis, and is often associated with chronic musculoskeletal pain, spinal involvement, and long-term opioid or intrathecal analgesic use

Multidisciplinary discussion: Maternal-fetal medicine, obstetric anesthesia and neonatal ICU → discussion of pain control and neonatal considerations

Pain Issues in Laboring Patients with SAPHO

- Severe axial skeletal pain:
 - Involvement of spine, sternum, clavicles → pain worsens with positioning required in labor
- Chest wall pain:
 - Can be exacerbated by Valsalva/pushing, breathing, and muscle strain
- Limited mobility:
 - Difficulty tolerating common labor positions (supine, lithotomy, lateral)
- Chronic pain sensitization:
 - Patients may have central sensitization → heightened pain perception
- Opioid tolerance (if chronic use):
 - May require higher analgesic dosing
- Neuraxial challenges:
 - Spinal involvement (osteitis/hyperostosis) can make epidural/spinal placement technically difficult or painful

Case Presentation

We present a 29-year-old G1P1 who presented in painful labor requesting a trial of labor after cesarean (TOLAC). Her history was significant for SAPHO syndrome, Chron's disease, exercise-induced asthma with rare inhaler use; prior VATS for a right lung abscess without residual pulmonary impairment, chronic back pain treated with oxycodone 15 mg four times daily and an intrathecal pump delivering hydromorphone and bupivacaine.



FIGURE 1: CT Imaging of spine showing the entry points of intrathecal pump catheters at L2-3 & L3-4

Initial Presentation

- 29 y/o G1P1001 at 38+0wks in early labor, desires TOLAC, admitted to L&D for expectant management. She is educated on pain analgesia options which include fentanyl PCA and Nitrous Oxide given her extensive history.

Progression of Labor

- Patient is started on Fentanyl PCA which gives limited relief. She can tolerate early changes for a few hours and then requests the addition of nitrous oxide.
- Regional Anesthesia was considered; however, it was avoided due to risk of damaging the IT pump or introducing infection.

Decision for C/S as per maternal request

- Patient is unable to tolerate pain any further and understands C/S will be performed under General Anesthesia.

In the OR

- Patient is given Benadryl for prophylaxis to propofol given allergy history. She is intubated with a McGrath 3, 6.5 ETT with a grade I view. Baby is delivered and brought to NICU. No complications with surgery.

End of Surgery

- Transabdominal Plane Block (TAP) is performed under ultrasound guidance. Nerve catheters are placed and patient is extubated and taken to recovery.

Postoperative Pain

- TAP Block is infusing 0.2% Bupivacaine at 25ml/hr.
- Hydromorphone PCA is started at a dose of 0.5mg, lockout interval: 15 minutes, 4hrs max: 6mg.
- Patient is transitioned to her home pain regimen on POD 2 and discharged POD 4.

Discussion

- This case underscores the importance of individualized, imaging-based risk assessment and multidisciplinary collaboration when considering neuraxial anesthesia and delivery planning in patients with relative contraindications to neuraxial anesthesia.
- Opioids – Fentanyl, Morphine, Hydromorphone, Remifentanyl should be utilized for moderate–severe pain, labor analgesia
 - Short acting agents (fentanyl, remifentanyl) are preferred
 - Must monitor for respiratory depression and neonatal depression
- Inhalation agents - Nitrous Oxide (50% N₂O / O₂) allows for rapid onset/offset and is self-administered
 - Easy to initiate and non-invasive
 - Less effective than epidural, dizziness and nausea can occur
- Peripheral Nerve Blocks – TAP (abdominal), Pudendal (second stage of labor)
 - Targeted, opioid sparing

Conclusion

When neuraxial anesthesia is contraindicated, pain should be managed using a multimodal strategy—including systemic analgesics, peripheral regional techniques, inhaled agents, and non-pharmacologic methods. Also, early planning within a multidisciplinary, patient-centered framework involving high-risk obstetrics and relevant subspecialties (obstetric anesthesia and neurosurgery) would facilitate optimization of the patient, development of the safest and most effective analgesic strategy in the context of the intrathecal pump, and comprehensive counseling to set realistic expectations.