

Pain with Labor Epidural Analgesia (PLEA): a Scoping Review

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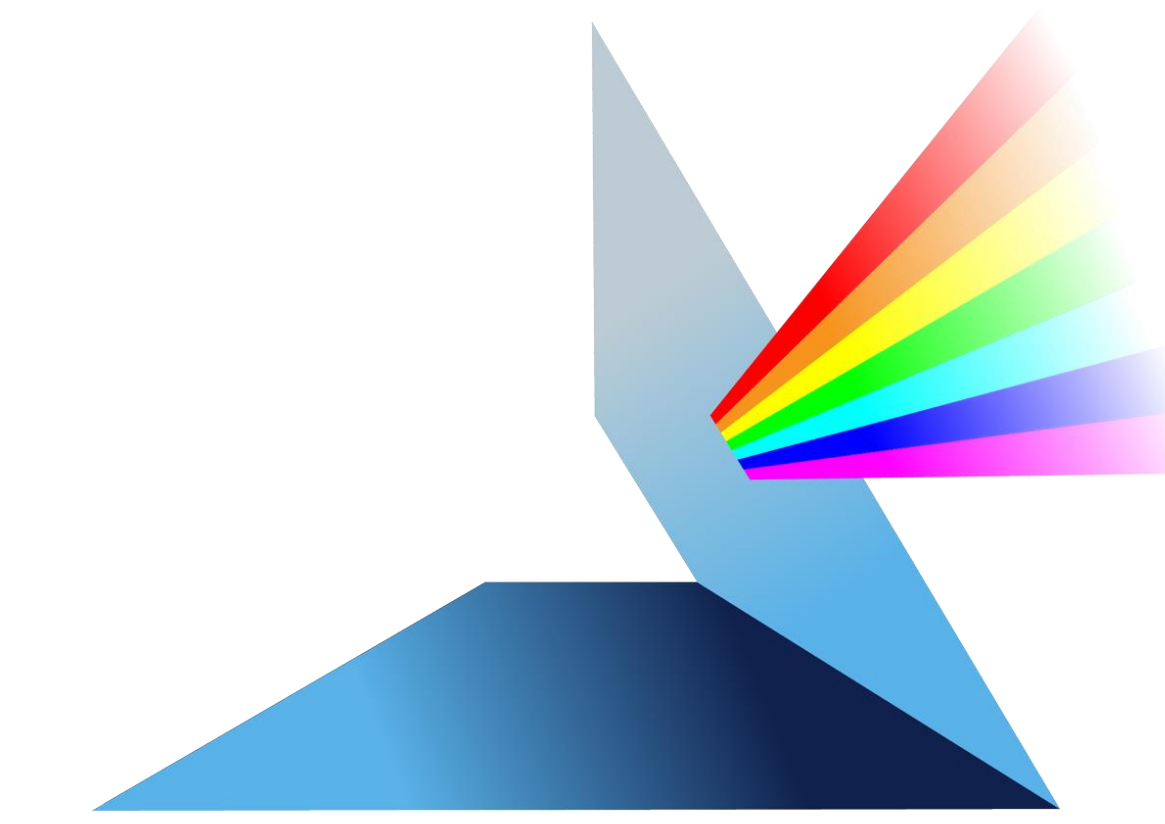
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Background

- 1972: “sharp pain between the scapulae... back of neck”
 - During epidural infusion of Hartmann’s solution as dural puncture headache prophylaxis measure
- 1984: “searing pain between her shoulder blades”
 - During labor epidural analgesia
- 2024: Pain with Labor Epidural Analgesia (PLEA) is coined

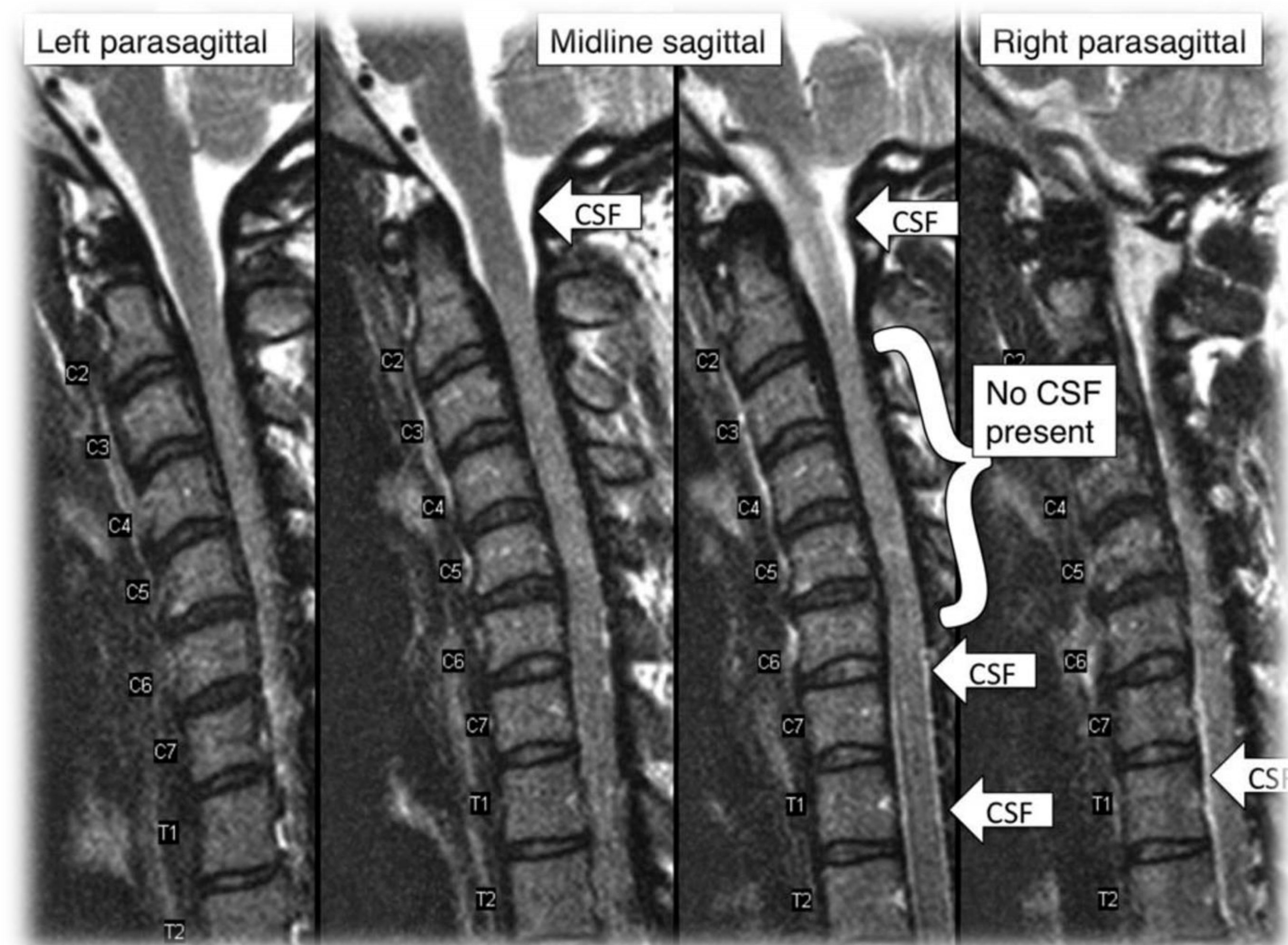
Methods

- PRISMA-ScR guidelines
- Searched PubMed and Embase in Dec 2025-Jan 2026
- Obstetric patients reporting pain in neck, shoulder, or interscapular areas
- Data chart with:
 - 4 categories describing the article
 - 6 categories summarizing the topic



Results

- 13 publications, 2 abstracts
 - 11 case reports or series
 - 3 case-control studies (largest 64 cases)
- 210 + cases
- Incidence 0.46-1.2%
- 1 case with imaging



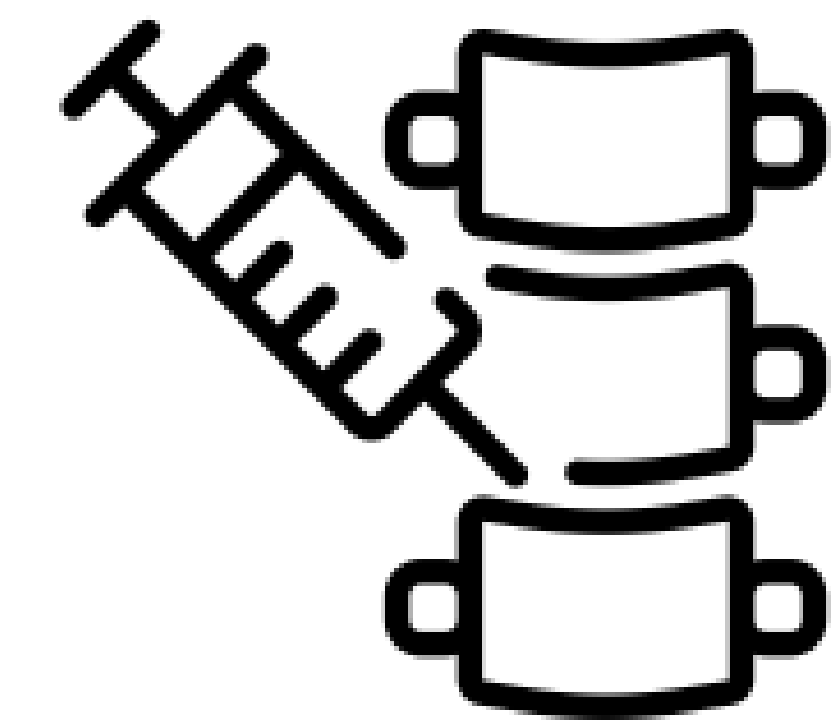
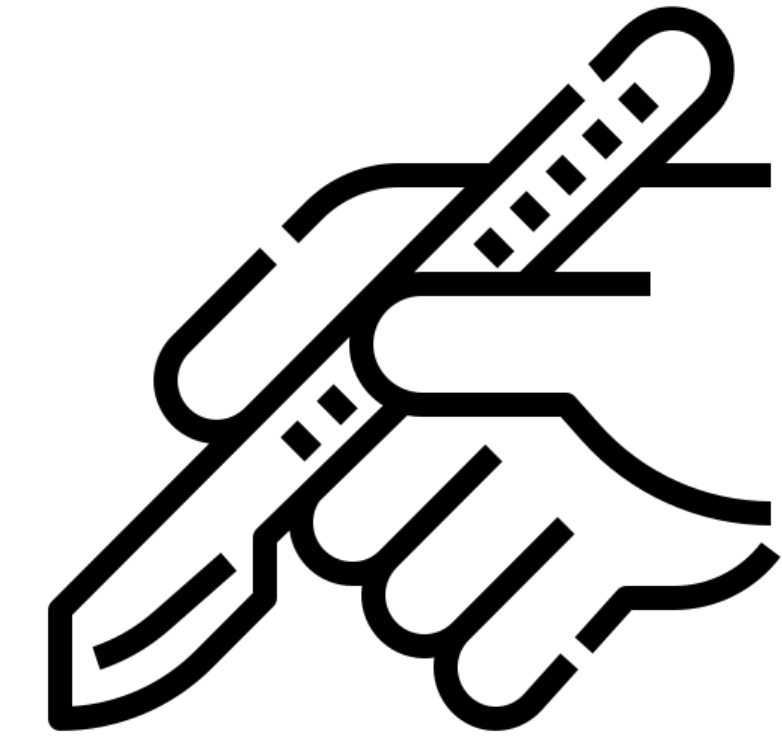
Dickerson DM, Dai R, Scavone BM, McDade W. Labor Epidural Intolerance Due to a Congenitally Narrowed Spinal Canal. *Regional Anesthesia and Pain Medicine*. 2016;41(6).

Author, Country	Year/Journal	Study Type/# Cases
Crawford, UK	1972 BJA	Case series n= “several”/18
Edwards, UK	1984 Anaesthesia	Case report n=1
Moore, UK	1984 Anaesthesia	Correspondence n=1
Campbell, UK	1984 Anaesthesia	Correspondence n=1
Shah, UK	1993 IJOA	Case series n=4
Lee, US	2007 ASA Abstract	Case series, corresp.
Nelson, US	2010 IJOA	n=44/9515 (0.46%)
Moore, Canada	2010 IJOA	Case report n=1
McKeown, Canada	2010 IJOA	Case report n=1
Dickerson, US	2016 Reg Anes Pain	Case report n=1
Klumpner, US	2016 Can J Anes	Case series n=3
Farrer, US	2018 SOAP Abstract	Case-control n=52
Samworth, US	2023 Cureus	Case report n=1
Shahar, Malaysia	2024 MJMHS	Case-control n=64
Achu-Lopes, US	2024 IJOA	QI prospective case series n=36/2888 (1.2%)



Results

- Proposed etiology – elevated **pressure** in the epidural space causing **traction** or **irritation** of upper thoracic nerve roots
- Associated factors:
 - young age
 - high BMI
 - nulliparity
 - prolonged epidural analgesia
 - **cesarean delivery**
- Suggested therapies:
 - epidural clonidine or fentanyl
 - **reducing volume/increasing concentration** of epidural infusion
 - epidural replacement



Discussion

- Unclear etiology
- Associated factors (age, parity, BMI, duration of epidural analgesia, and CD) vs. **confounding factors** of prolonged labor
- Suggested therapy of PIEB → CEA; PLEA reported in both
- No recommendations for extension of labor analgesia → intrapartum CD anesthesia, **when rapid administration of large volume solution is necessary**
- *Identifying PLEA early and providing management is crucial for providing adequate epidural labor analgesia and conversion to surgical anesthesia*

