

Abstract

An otherwise healthy, 22 yo F G2P0010 presented for IOL at 40w0d was found to have developed R sided Horner's syndrome with ipsilateral RUE numbness within 2 hours after uncomplicated one attempt labor epidural placement at L3-L4 level. Patient opted for Remifentanyl PCA instead of Epidural infusion given symptoms then eventually preferred epidural infusion as it had more adequate pain coverage. Epidural was restarted at lower PIEB dose and she delivered without issue despite milder symptoms. Symptoms resolved shortly after epidural cessation; postpartum period was uncomplicated. Horner's syndrome, a triad of miosis, ptosis, and anhidrosis, is a rare but benign complication of labor epidural analgesia, with an incidence of 0.4 - 4%. It is caused by cephalic spread of local anesthetics interrupting the sympathetic nerve supply to the face/eye. Enlarging epidural venous plexus leading decreased epidural space, obesity, and rhythmic contractions during labor all facilitate this cephalic spread. Lethal complications such as respiratory distress secondary to high sympathetic blockade with subsequent cardiopulmonary arrest can develop, thus patients should be followed closely.

Learning objectives

Caution healthcare providers in the Labor & Delivery unit of unilateral Horner's Syndrome +/- ipsilateral upper extremity weakness/numbness as a rare but known complication of labor epidural analgesia.

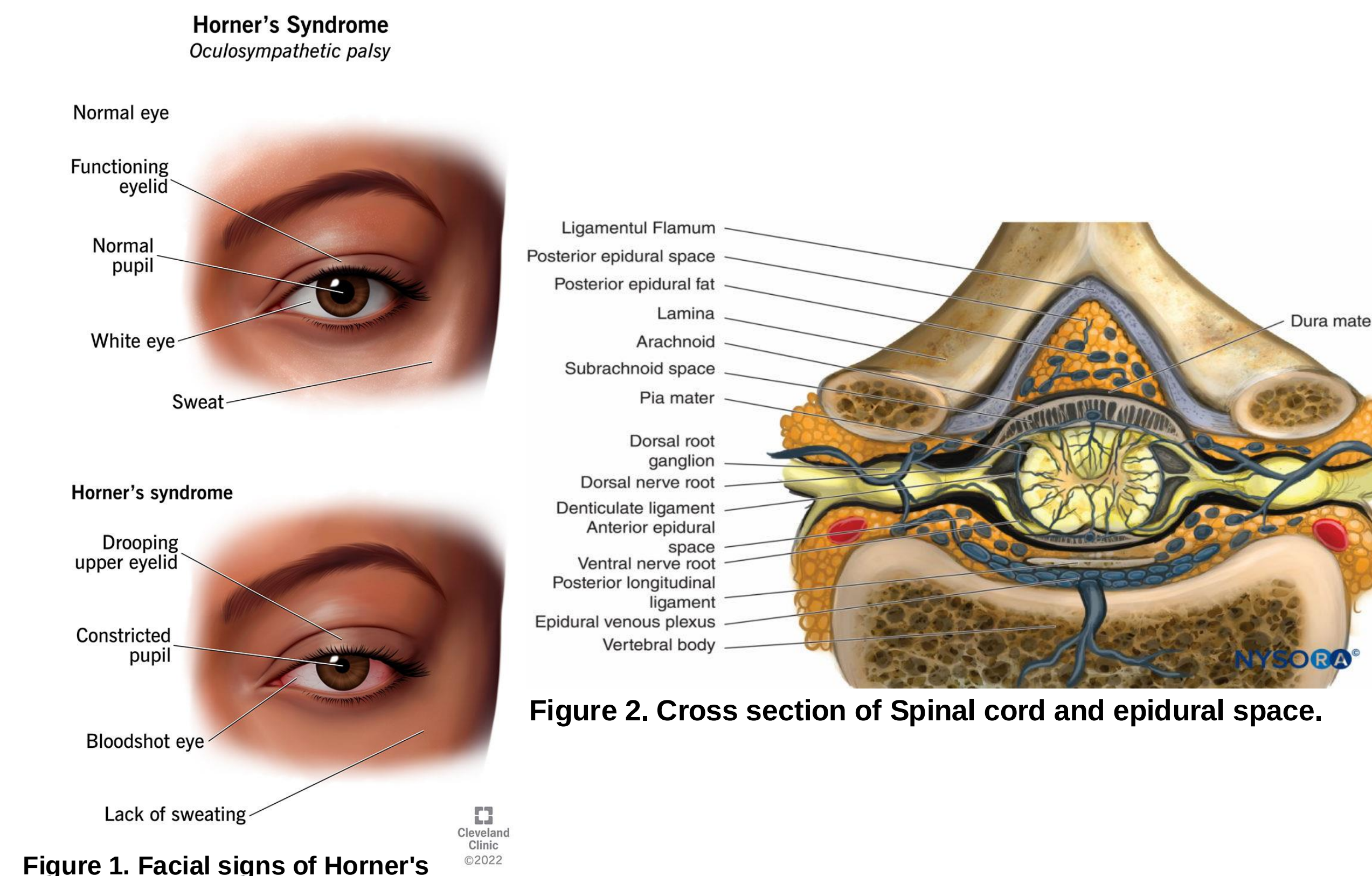


Figure 2. Cross section of Spinal cord and epidural space.

Case Details

22 yo (100kg, 170.18cm; BMI 34.53kg/m2) G2P0010 F presenting for scheduled IOL at 40w0d

PMhx of childhood asthma requiring hospitalization

Plain epidural (LOR at 6cm, secured at 11cm, test dose 3ml 1.5% Lidocaine with Epinephrine 1:200k) administered in sitting position at the L3-L4 level after one attempt without any complications

Ropivacaine 0.1% with fentanyl 400mcg in 200ml 0.9% Sodium Chloride epidural started via Programmed Intermittent Epidural Bolus (PIEB) at 10ml every 40min.

After 2 hours, the patient developed right-sided Horner's Syndrome and upper extremity numbness.

Neurological Physical Exam:

MS: AAOx3, no dysarthria, no aphasia, follows simple and complex commands, answers questions appropriately

CN: Right pupil 2 mm and constricted, Left pupil 4 mm and briskly reactive. Right eye with conjunctival hyperemia and ptosis. EOMI, visual fields intact. +Flushing to right side of face. No facial asymmetry. +Subjective decreased sensation to right face

Sensation: Subjective decreased sensation to arm and leg on right on tactile touch.

Coordination: no abnormal movements

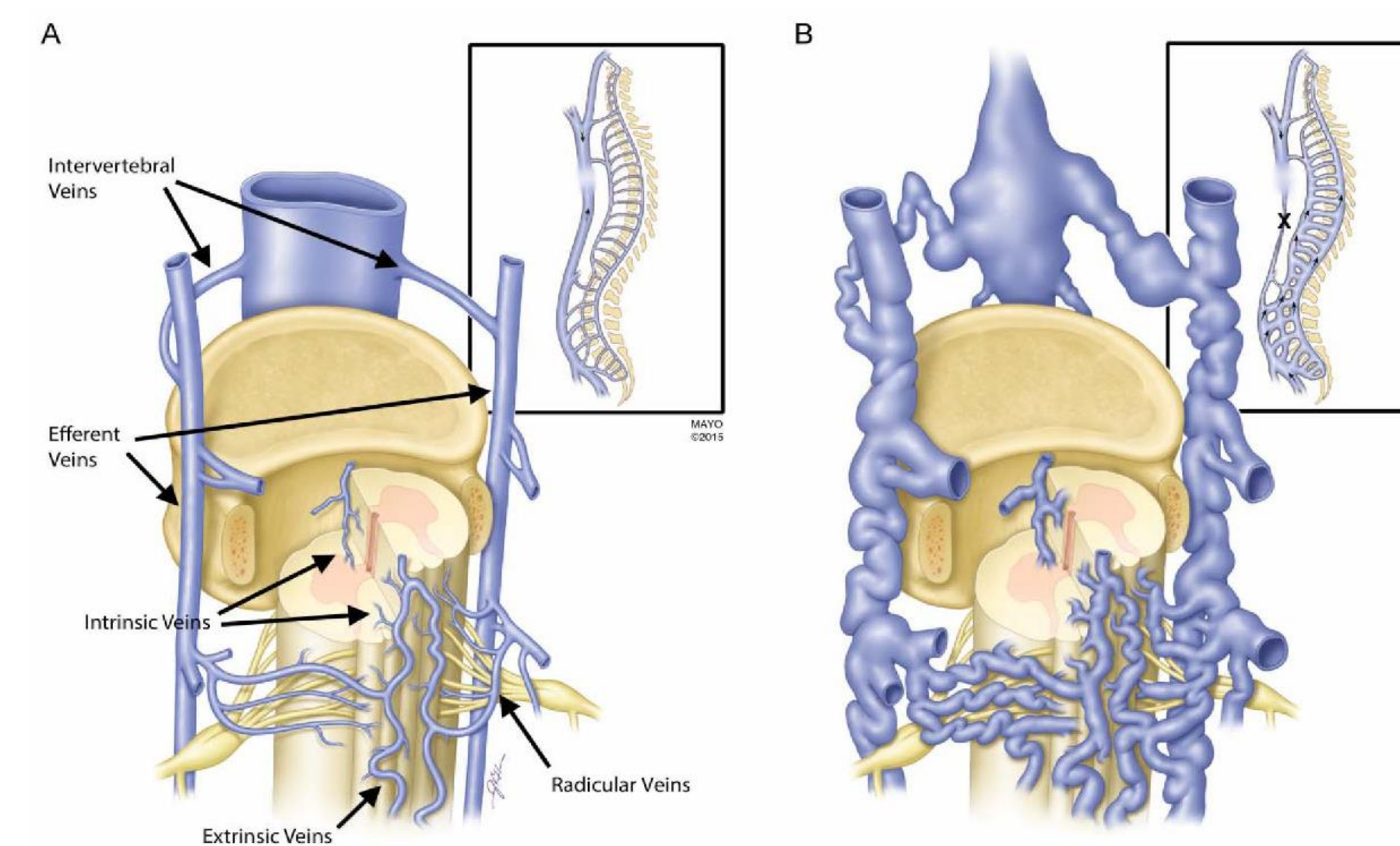


Figure 3. Engorged epidural venous plexus.

Discussion

- Horner's Syndrome; triad of miosis, ptosis, and anhidrosis. Signs can also include hyperemia of eye as seen in figure 1.
- Caused by disruption of sympathetic fibers to the face; preganglionic fibers from anterior horn cells of C8-T1, as low as T4
- Incidence 0.4 - 4% in this population, which is higher than the general population
- Caused by cephalic spread of local anesthetic in epidural space interrupting sympathetic nerve supply
- Contributions to cephalic spread:
 1. Increased intra-abdominal pressure -> IVC occlusion -> engorged epidural venous plexus as illustrated in Figure 2 and 3.
 2. Obesity
 3. Rhythmic contractions
- Symptoms are generally benign, and they spontaneously regress over time. Signs appear approximately 25 min after the epidural administration (2–100 min), and they disappear in 215 min on average (3 min–24 h)
- Options once diagnosis is made includes
 1. Continuing infusion if adequate pain relief
 2. Stopping infusion and restarting once symptoms resolve
 3. Rule out subdural placement; if subdural, remove catheter
- Rule out Pancoast tumor or Thoracic aortic aneurysm if symptoms do no regress with cessation of epidural
- Horner's syndrome is precursor to High sympathetic blockade or cardiopulmonary arrest, close monitoring necessary until cessation of block.

References

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