

### 43. EPIDURAL MORPHINE ASSOCIATED DOWNBEAT NYSTAGMUS: AN UNUSUAL CAUSE OF POSTOPERATIVE NAUSEA AND VOMITING

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**Introduction:** The demonstration that effective and prolonged pain relief can be achieved by injection of small doses of morphine into the epidural space is well established.<sup>1</sup> There are a variety of well known complications associated with epidural opioid use. The most frequent are nausea, pruritus, urinary retention, and respiratory depression.<sup>2</sup> We describe a case of postoperative nausea and vomiting that was attributable to epidural morphine induced nystagmus.

**Case Report:** This 70-year-old female presented for revision of her gastric bypass for symptoms of left upper quadrant pain and nausea. Her past medical history was significant for previous gastric stapling, medically controlled hypertension, depression, hypothyroidism and gastroesophageal reflux disease. She had no documentation, or knowledge of preexisting neurologic disease or dysfunction. She had no known drug allergies, and was on medications appropriate for her coexisting diseases including aspirin, hydrochlorothiazide, atenolol, sertraline, Synthroid, ranitidine, and metoclopramide.

The patient underwent uneventful general anesthesia. Preoperatively, a lumbar epidural catheter was placed uneventfully at the L3-4 interspace and threaded 5 cm. The epidural was used for intraoperative and postoperative pain analgesia. A 4-mg preservative free morphine bolus in 10 cc of normal saline was given epidurally prior to completion of the case. The surgery was uneventful, and the patient was extubated postoperatively without complication. She was evaluated by the anesthesia pain service in the postoperative care unit, and placed on a continuous epidural MSO4 infusion at 600 ug per hour, using a 100 ug per ml morphine solution.

Fourteen hours postoperatively, the patient was reassessed by the anesthesia pain service. While she rated her pain control as excellent, she did complain of nausea and vomiting. With questioning she reported blurry vision, inability to focus, as well as "jumping" images. She noted that these symptoms and the nausea abated with closure of her eyes.

On examination, the patient was alert and oriented to person, place, and time. Her pupils were 4mm in diameter, symmetric and reactive to light. Her extraocular movements were intact, but she was noted to have vertical nystagmus, with the fast component in a downward direction. The rest of her neurologic testing was unremarkable. The epidural catheter site was clean, and aspiration of the catheter revealed no abnormalities. She was afebrile.

She was treated with intravenous naloxone for presumed epidural morphine interactions. An initial dose of 40-ug resulted in significant improvement of her symptoms. An additional 40-ug dose completely resolved her visual complaints, nausea, and nystagmus. Epidural morphine was discontinued. Intravenous infusion of naloxone at 20 mcg per hour was initiated and continued for twelve hours. An alternate epidural opioid (hydromorphone) was offered but declined by the patient. Analgesia was obtained with intravenous hydromorphone PCA. On follow-up, patient had continued analgesia but no additional visual complaints, nausea or nystagmus.

**Discussion:** Downbeat nystagmus is a disturbance of ocular motility often associated with pathological conditions. While typically associated with structural lesions of the cervicomedullary junction or cerebellum, it may also occur from metabolic derangements and the interaction of various medications.<sup>3</sup> Medications usually associated with downbeat nystagmus include lithium carbonate, phenytoin, amiodarone, and carbamazepine.<sup>4</sup> The first case report suggesting the association of epidural morphine to downbeat nystagmus was made by Fish et al. in 1990.<sup>2</sup> Since that time, both intrathecal administration, and most recently intravenous injection, have likewise been linked to this side effect.<sup>5-7</sup>

The nausea associated with neuraxial morphine is generally thought to be due to direct action in the CMTZ within the brainstem. This case represents another potential mechanism for neuraxial morphine associated nausea and vomiting. In this case the primary effect is alteration of the ocular-stabilizing apparatus in the CNS. The secondary effect is visual vertigo resulting in nausea and vomiting.

This case report demonstrates an unusual cause of nausea and vomiting in the postoperative period. Symptoms resolved abruptly with small doses of intravenous naloxone without compromising analgesia. This case highlights the importance of patient evaluation and an index of suspicion for atypical causes of typical postoperative complications.

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