

Mepivacaine nerve root block and oxycodone improve pain management in pregnancy with a metastatic bone tumor but compromise newborn respiratory health

Dear Editor,

Although opioid-induced respiratory depression (OIRD), an important opioid use risk in pregnant women, is not well-reported. Here we report the case of a 37-year-old pregnant woman with metastatic bone tumor and severe pain. Four years previously, she underwent surgery and radiation therapy for retroperitoneal leiomyosarcoma. At follow-up, positron emission tomography indicated metastasis in the right lung and right ischium [Figure 1a], and computed tomography (CT) detected lytic lesion in the right ischium [Figure 1b]. After detection of the metastatic lesions, she conceived. In the 12th week of her pregnancy, she presented to our clinic with right thigh pain and gait disturbance. We initiated therapy using diclofenac suppository (50 mg) once/twice daily, loxoprofen Na 180 mg/day, and acetaminophen 1500 mg/day, but pain persisted. At 14-week pregnancy, we started oxycodone 5 mg/day. With increasing pain, opioid demand increased; at 17-week gestation, oxycodone dose was increased to 20 mg/day, but emesis gravidarum and opioid nausea

developed. As alternative treatment, we administered L4 and L5 nerve root block using 2.5 ml of 1% mepivacaine hydrochloride for each nerve root/time) [Figure 2]. Subsequently, pain reduced immediately, but the relief was not continuous; therefore, nine nerve root blocks were administered before delivery. While performing the nerve root blocks, radiation protective apron was used to protect the fetus from radiation exposure. At 35-week gestation, oxycodone demand was 130 mg/day, and the patient was admitted due to difficulty in walking [Figure 3]. Bed rest reduced the pain and no further block procedures or epidural anesthesia was administered to prevent complications.^[1] A cesarean section was performed at 37-week gestation owing to severe pain. The newborn was sedated. We diagnosed that it was a reaction to the loss of maternally supplied opioids. Neonatal intensive care unit-based intubation control was needed. The day following birth, the baby had normal breathing. At the final pediatric follow-up (60 weeks, 5 days), had no problems. Maternal postpartum X-ray and CT indicated ischium and lytic

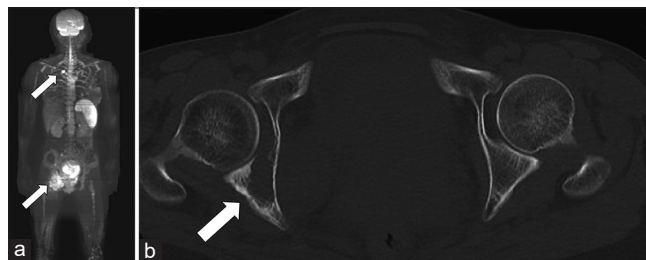


Figure 1: Position emission tomography (PET) and computed tomography (CT) images before pregnancy. (a) PET before pregnancy, metastatic lesion in right lung and right ischium (white arrow). (b) CT just before pregnancy, lytic lesion (white arrow)

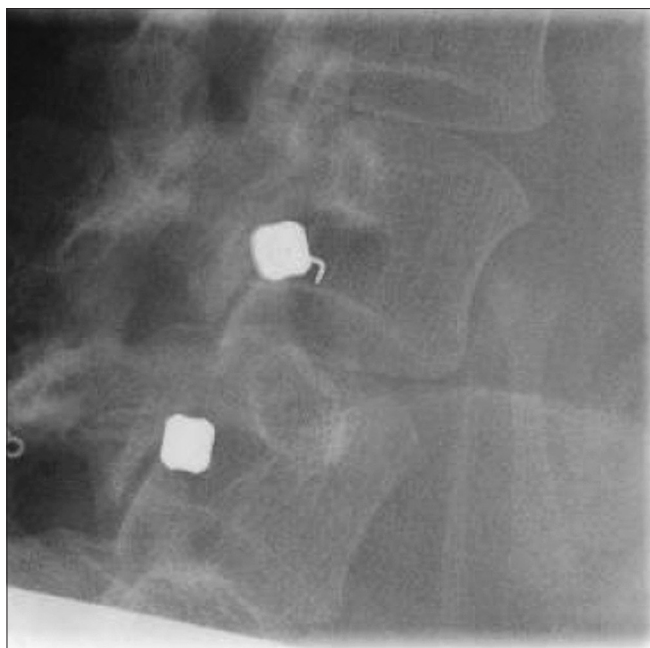


Figure 2: X-ray imaging during nerve root block. L4–L5 root block using 2.5 mL of 1% mepivacaine for each nerve root

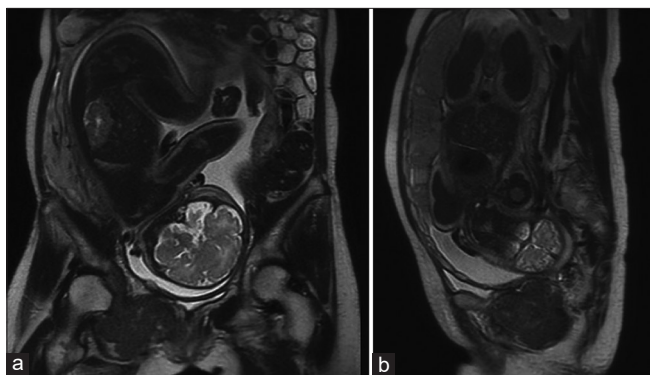


Figure 3: MRI. (a) Coronal view. (b) Axial view. Ischium metastasis invasive to soft tissue is observed. No neonatal metastasis is observed

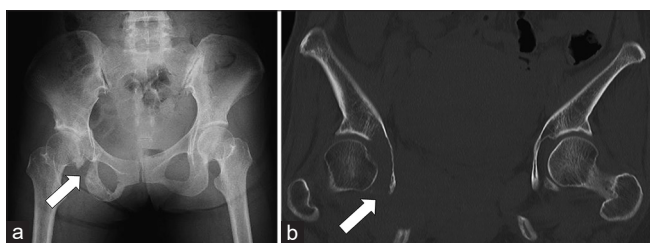


Figure 4: X-ray and computed tomography (CT) image after delivery. (a) X-ray revealing a lytic lesion in the acetabulum. (b) CT image indicating a fracture of the ischium

region fracture in the acetabulum [Figure 4]. Oxycodone demand was 60 mg/day, diclofenac was 150 mg/day, and acetaminophen was 3000 mg/day at final follow-up. For palliative care, the opioid use in pregnancy must be decided in conjunction with pediatrics to treat OIRD. Opioid treatment in pregnancy is potentially life-threatening in the

perinatal setting, requiring naloxone, tracheal intubation, and/or resuscitation.^[2] The newborn's wellbeing is a major outcome of this case. Moreover, the efforts to use nerve root blocking as an alternative or complement to opioids in pain management were hampered by the difficulty in maintaining the prone position at the end stage of pregnancy; another pain-reducing procedure was necessary. Maternal oxycodone consumption is associated with an increased risk of central nervous system depression in breastfed infants;^[3] another report described the harmful effects of using opioids.^[4] Thus, we advised our patient not to breastfeed. Selection of the epidural procedure may have decreased opioid demands,^[5] and OIRD may not have occurred. However, no other reports exist. Hence, this case report has educational importance for the treatment of such severe cases.

Ethics approval and consent to participate

Ethics committee of Showa University Northern Yokohama Hospital.

Approval Number: 19H022.

Approval date: August 15, 2019.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Ruppen W, Derry S, McQuay H, Moore RA. Incidence of epidural hematoma, infection, and neurologic injury in obstetric patients with epidural analgesia/anesthesia. *Anesthesiology* 2006;2:394-9.
2. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin* 2018;68:394-24.
3. Lam J, Kelly L, Ciszkowski C, Landsmeer MLA, Nauta M, Carleton BC, *et al*. Central nervous system depression of neonates breastfed by mothers receiving oxycodone for postpartum analgesia. *J Pediatr* 2012;160:33-7.e2.
4. Niesters M, Overdyk F, Smith T, Aarts L, Dahan A. Opioid-induced respiratory depression in paediatrics: A review of case reports. *Br J Anaesth* 2013;110:175-82.
5. Mehta JH, Gibson ME, Amaro-Driedger D, Hussain MN. Thoracic epidural analgesia to control malignant pain until viability in a pregnant patient. *J Pain Res* 2016;9:357-60.

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