
CASE REPORTS

BACK PAIN AFTER LABOUR UNDER EPIDURAL ANALGESIA

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Abstract

In this case report we have discussed a parturient patient who had epidural analgesia during childbirth and then presented with back pain 50 days postpartum as well as the causes of postpartum back pain.

Keywords: Analgesia, Epidural, Pain, Back pain, Musculoskeletal Diseases, Bone diseases, Metabolic, Osteoporosis.

Introduction

Back pain, chemical backache, postdural puncture headache (PDPH), and neurological deficit may all be reported after the use of regional anesthesia in childbirth. Epidural analgesia during labour has been associated with a higher incidence of backache. Although osteoporosis associated with pregnancy and lactation is a rare condition, it causes one or more vertebral fractures with severe, prolonged back pain.

In this case report, a parturient who had epidural analgesia during childbirth and presented with back pain is discussed.

Case Report

A twenty-three year old primiparous patient at 38 weeks gestation was admitted to the hospital discharging amniotic fluid. On admission her blood pressure was 112/68 mmHg, pulse rate 74/min, SpO₂ 100, breath rate 18/min. Her body weight was 74 kg and she was 152 cm tall. The cervix was found to be 3-4 cm dilated and 60% effaced on examination. Fetal heart sounds were positive and reactive. The patient had irregular contractions. She had no previous vertebral operations nor fractures nor any other operations on her back. Epidural analgesia was planned and after patient approval, a 20G epidural catheter was inserted through an 18G Touhy needle at L4-5 level when

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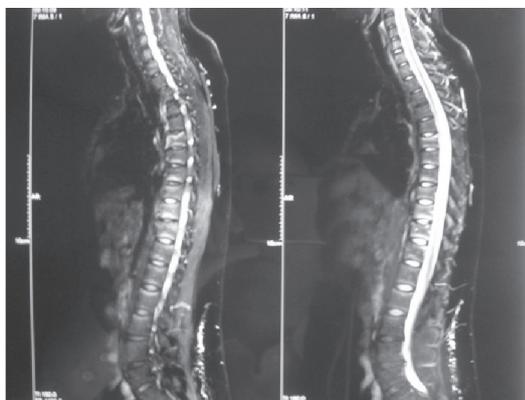
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the patient was 4-5cm dilated. Epidural analgesia was started using Bupivacaine 0.0625% and Fentanyl 1mcg/ml 12ml/hour. The labour lasted 3 hours and the epidural analgesia continued uneventfully throughout. At the end of labour, the epidural catheter was removed without any problems. The patient was referred to the anesthesia clinic 50 days postpartum. She was complaining of backache at rest and she could not rise up from lying without assistance. She had tenderness around her thoracic vertebrae but was comfortable in the lumbar region on examination. In her history, she had lifted a heavy bed with holding her baby in one arm. A neurosurgical examination was carried out. Other than osteoporotic changes, no pathological changes were observed at her lumbosacral and dorsal vertebra on direct radiological examination. On MRI examination, compression fractures secondary to osteoporosis were found at levels T6-L2 (being more pronounced at T6), and slight bulging was observed at L4-5. No instability was noted (Fig. 1). Her laboratory tests were within normal limits, except for a decrease in thyroid stimulating hormone, a slight anemia, an elevated alkaline phosphatase and a decrease in her ergocalciferol. (Table 1). Her parathormone was at the lowest limit of the laboratory normal level. She was assessed by physical therapy and rehabilitation.

Fig. 1 and Fig.2
MRI examination of the patient



She was scheduled for vertebroplasties (T6, T10, T11). After surgery (Figure 2), the patient was able to mobilize and was discharged from hospital without any other problems/complaints.

Discussion

Table 1
Laboratory values of the patient

Laboratory examinations	Result	Reference values
Hemoglobin	14.7	11.5-15.5 g/dl
Hematocrit	38.8	%
Platelets	317	150-400 K/mL
Thyroid peroxidase anticor-anti-TPO	<5.0	0-35 IU/ml
Thyroglobin anticor-anti-Tg	12.87	0-115IU/ml
Thyroidotironin, free- FT3	4.84	2.8-7.1 pmol/l
Thyroxin,free- FT4	15.51	10.3-23.2pmol/L
Thyroid stimulating hormone-TSH	0.203	0.4-4.2uIU/ml
TSH receptor anticor-TRAK	<0.1	<1.0 IU/L
Calcium	9.8	8.6-10.0 mg/dL
Alkalen phosphatase	119	42-98 U/L
Vitamin D2-Ergocalciferol	<1.0	2-7ng/ml
Parathormone-PTH, intact	15.74	15-65 pg/mL

A young, healthy puerperant who had epidural analgesia during labour and presented with back pain 50 days postpartum is presented in this case report.

Postpartum back pain may occur in up to 44% of women after childbirth. The increasing use of epidural analgesia during labour over the past 35 years has led many women and some doctors to attribute postpartum back pain to the increase in epidural analgesia. Such suggestions, if unfounded, may undermine parturients' confidence in epidural analgesia. However, the outcome of recent, randomized studies clearly shows that epidural analgesia does not cause back pain¹. Concern has been expressed that epidural analgesia in labour may be associated with a higher incidence of backache. A prospective randomized trial investigating the effect of epidural analgesia on the outcome of labour in nulliparae was carried out. Epidural analgesia in labour was not associated with an increase in the prevalence or incidence of backache². In a review discussing the long term effects of analgesia in labour, it was stated that the most frequently reported maternal effects of epidural or spinal analgesia are prolonged

symptoms of headache, backache and neurological sequelae. Prospective studies have not confirmed any causal relationship between epidural analgesia and backache. Neurological complications are five times more common after childbirth itself than after regional nerve blockade.

Back pain, chemical backache, PDPH, and neurological deficit may all be reported after regional anesthesia in childbirth. Back pain is common during pregnancy but epidural analgesia during labor does not increase the incidence of long-term back pain⁴.

Low-back and buttock pain is a common complaint during pregnancy and the postpartum period. In a study reviewing eight postpartum sacral stress fractures it was recommended that sacral fracture during pregnancy and the postpartum period should be considered as a diagnostic possibility⁵. Pregnancy and lactation-associated osteoporosis (PLO) is an uncommon condition characterized by the occurrence of fracture(s) during late pregnancy or the puerperium. The aetiology is uncertain and its management and natural history is poorly defined. PLO is therefore associated with significant morbidity, a high prevalence of recognized risk factors for osteoporosis and a risk of recurrence in subsequent pregnancies⁶. Women with a positive family history of osteoporosis or low trauma fractures may be susceptible to PLO. PLO should be considered when back pain occurs during pregnancy and/or lactation as it can lead to vertebral or peripheral fractures⁷.

The onset of idiopathic osteoporosis after delivery is called "Post-Pregnancy Osteoporosis" (PPO). Back pain and vertebral collapse are the most frequent features and individuals with back pain during, or immediately after, pregnancy are suspected of PPO⁹. This disease usually occurs in the first pregnancy but does not recur. However, the mechanisms of the disease remain to be elucidated. In the first weeks of pregnancy, the calcium intestinal absorption rises and reaches a maximum in the last trimester. Hypercalciuria can be observed until

lactation is stopped. During lactation, calcium that is present in maternal milk, results from the lowering of maternal calcium excretion and an increasing of bone resorption. Plasma $1,25(\text{OH})^2\text{D}^3$ levels increase two-fold in early pregnancy due to high placental 1-alpha-hydroxylase activity. These levels remain high until delivery and decline to normal values during lactation. Estrogen, prolactin and placental lactogen, which are involved in calcium absorption, increase at the same time. Normal or even low levels of parathyroid hormone (PTH) can be detected during pregnancy. In exceptional circumstances the abovementioned changes can lead to generalized or regional osteoporosis¹⁰. It is suggested that in patients with post-pregnancy osteoporosis, there may have been a transient failure of the usual changes in calcitropic hormones such as $1,25(\text{OH})_2\text{D}$, calcitonin and parathyroid hormone (PTH) to prepare the maternal skeleton for the stress of childbirth¹¹. PPO presents in late pregnancy or within 3 months postpartum. Common criteria for PPO include back pain, spinal fractures, late diagnosis of the condition, occurrence within the first pregnancy or during lactation, loss of height, low bone density, pre-existing osteopenia and where the patient's mother is osteoporotic. There is some recovery of bone mass over time⁸. Calcium, active vitamin D analogues and anti-resorptive agents (biphosphonate or calcitonin) are the suggested therapies⁹.

Conclusion

Postpartum back pain has several causes one of which has been stated as epidural analgesia. Osteoporosis due to pregnancy and lactation is a very rare condition but has to be suspected when back pain or vertebral fractures occur during this period. In this case report we discuss a patient who was admitted to hospital with back pain thought to be caused by epidural analgesia but who was instead found to have vertebral fractures due to osteoporosis.

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