

## Case Report

## Femoral Fracture in Pregnancy

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## ABSTRACT

Ortopedic injury is rare in pregnancy with incidence of 1%.<sup>1</sup> The most common injury is femoral fracture and it is more often in third trimester of pregnancy. We present a case of untraumatic unilateral neck fracture of femur in third trimester of pregnancy. The fracture was not surgically repaired. The patient had vaginal delivered. In meantime, before and after delivery, she had prophylaxis therapy with Low Molecular Heparin.

**Keywords:** Pregnancy; Femoral Fracture; Antepartum Testing; Venous Thromboembolism Prevention; Osteoporosis in Pregnancy.

## CASE REPORT

D.D is a 29-year old 3-para patient, that admit to the Department of Gynecology and Obstetrics at 31 weeks of gestation and 6 days because of pain in right hip, reduced range of movement and inability to walk. Her obstetric history consisted of two uncomplicated term vaginal deliveries. She was non smoker, with normal BMI and no medication take.

From past medical history stands out headache with confusion, dizziness, nausea and photophobia. The patient was examined by neurologist before and during pregnancy. It was recommended MRI of endocranium and ophthalmological examination. The both examination were refused by patient. Before 5 years the patient had car accident with injury of cervical vertebrae.

After admission to our department the patient had a laboratory evaluation detected a normal value of serum calcium, phosphorus, parathormon, total protein, albumin, copper, ceruloplasmin, FBC, ESR and low serum level of vitamin D3. Because of immobilisation and high risk of venous thromboembolism the patient received Low Molecular Heparin (Figure 1). The dose was prescribed by transfusionist with monitoring of anti Xa factor.

**Figure 1.** The plain film radiography of pelvis and femur confirm fracture of right femoral neck and bone cyst at the tip of the right femur



Due to risk for mother and baby, the patient was sent to Clinic of Gynecology and Obstetrics Novi Sad for a consultation. There was made MRI of pelvis and femur (Figure 2).

**Figure 2.** MRI of pelvis and femur



The results confirm in the neck region intertrochanteric and in the part of the femoral head on the right side, an irregular expansive

clearly limited, multiseptic lesion of heterogeneous appearance measuring 35mmx57mmx 37mm, which could correspond to an aneurysmal bone cyst. In the neck of the femur, on the same side, there is a hypointensive linear zone corresponding to the fracture, with discrete edema of the surrounding bone marrow, without signs of dislocation. It is present also a periarticular moderate edema of the musculature (m.gluteus maximus, m.iliopectineus), with a small amount of fluid in the iliopsoas bursa. The malignancy of bone was excluded.

After consultation, the patient was admitted to our hospital to the Department of Gynecology and Obstetrics, Zrenjanin.

The orthopedists recommended immobilization until delivery and installation of total hip prosthesis, when the conditions for termination of pregnancy are made.

According to the recommendations of the orthopedist it was decided to do a natural vaginal delivery, if there were no other obstetric contraindications. The patient delivered at 39 weeks of gestation and 6 days, vaginally. She gave birth to a healthy female baby (Weight- 3190g, Length-51cm) with an Apgar Score of 9 in the first minute and 9 in 5 minutes. There were no dislocations of femur and pelvis bones or other complications occurred during delivery. After delivery the patient started with physical therapy with emphasis on hip abduction and verticalization. The hospitalization lasted 70 days. She stands on her legs (with orthopedic expedient/ a cane) and can independently walk.

The patient was not operated on during the hospitalization. There is no further information on her orthopaedic treatment. The etiology of this case was probably osteoporosis late in pregnancy defined by low value of Vitamin D and MRI and X-ray evolution.

## DISCUSSION

Femoral fracture in pregnancy is in association with complications which may occur spontaneously or with minimal trauma. A case report and small trial leave obstetric route unclear.

The etiology of this affection are: osteoporotic changes during pregnancy in origin with increasing adrenocortical activity in third trimester, secondary to smoking, low levels of calcium and vitamin D, hyperplastic parathyroid glands, dietary calcium intake, excessive alcohol intake, Cushing syndrome, rheumatoid arthritis.<sup>2,3</sup>

Some reports estimate a high risk of intrauterine fetal demise (40%).<sup>1</sup>

Osteoporosis in pregnancy appears to be associated with a reduced osteoblastic activity and is generally defined as a disorder characterized by decreased bone mass and bone fragility in absence of other recognizable causes of bone loss.<sup>2,4</sup> Literature for this article is limited because of few study reports. The obstetric management during this injury is unclear. Literature for this article is limited because of few study reports. The obstetric management during this injury is unclear. Due to

this there is a difference in opinion of a gynecologist and an orthopedic. The literature sources put an accent on vaginal delivery regardless of the fact if the patient went under a broken femur surgery or not. Injuries after a trauma went under surgery during the pregnancy. In the literature there is no data of significant complications of a wounded femur or a bone in the small pelvis, regardless of a gynecological posture during the delivery. Cesarean section was indicated only in cases of obstetric indications.

We have presented a case of fracture of the femoral neck without operative management. The patient did not undergo bone mineral density testing. The case is a multidisciplinary and includes many specialties as: orthopedist, obstetrician, transfusionist, physiatrist, neurologist, radiologist and neonatologist.

In conclusion all injury of femur benefited from prophylaxis with LMWH, supplementation with vitamin D and calcium and all were able to safely achieve vaginal delivery and in interest is early initiation of physical therapy.<sup>5</sup> Osteoporosis in pregnancy appears to be associated with a reduced osteoblastic activity and is generally defined as a disorder characterized by decreased bone mass and bone fragility in absence of other recognizable causes of bone loss.<sup>2,4</sup>

## CONCLUSION

This case of spontaneous fracture of femur was the first case in our hospital with the etiology of osteoporosis. For additional knowledge in this area we need for more cases, but as we say the femoral fractures in pregnancy are a rare complication with incidence of 1%. The vaginal delivery should not be contraindicated.

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