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Review Article

Features of Orthopaedic Treatment during Pregnancy

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Abstract

A break in the period of bearing a child is a serious trouble. But, fortunately, the frequency of fractures in pregnant women is still lower than the frequency of similar injuries in non-pregnant women. This is explained by the special protective mechanisms that work in the body of the future mother, and the greater caution of women. Contrary to popular belief, bone fragility during pregnancy does not increase, but, on the contrary, the bones of the legs and hands become denser and more durable. Therefore, breaking any part of the skeleton upon impact is not so easy. But sometimes traumas happen, and it is important for the future mother to know the first signs of a bone fracture, safe methods of treatment and tactics of behavior in case of a suspicion of a fracture, in time to seek help and keep your health and the health of the future baby.

Keywords: *Orthopaedic Trauma; Pregnancy; Fracture*

Introduction

The statistics of fractures are staggering: for every person who lives in a developed or developing country, a fracture of some bone occurs 1 - 2 times throughout life. About 7 million cases are registered annually in the United States [1,2].

There are two types of fractures: traumatic and pathological fractures.

Today we will discuss the topic of traumatic fractures during pregnancy.

The likelihood of injuries increases significantly during the cold season, especially when walking on icy roads. Therefore, whenever possible during such periods, the pregnant woman should spend maximum time indoors, try to reduce the level of her physical activity. After fracture of the bones, the course of pregnancy may become complicated, which leads to an additional risk [3].

Symptoms of a fracture

Bone fractures occur as a result of a load exceeding the limit of their strength. The cause of fracture in pregnant women is falling most often - weight change, displacement of the center of gravity, dizziness and weakness can lead to disruption of coordination and fall [4].

Symptoms of closed fracture are usually very characteristic - a sharp severe pain in the place of fracture, numbness and impaired mobility of the affected limb, severe swelling and cyanosis at the site of the fracture. With a significant displacement of bone fragments, deformation in the area of trauma is noticeable.

With an open fracture, the integrity of the skin is broken, the edges of bone fragments are visible from the wound. Often an open fracture is accompanied by severe bleeding and painful shock, therefore first aid should be given immediately. The main differences in treatment for fractures during pregnancy depend on the location of the fracture, the length of the pregnancy, the severity of the injury.

Fracture of upper limb

Most often, the pregnant women suffer from fractures of the hands - in fact, at the threat of falling, the woman intuitively groups and puts forward her hands to protect her stomach from hitting. As a result, a fracture of any bone of the upper humeral girdle can occur-from the wrist to the clavicle, it all depends on the impact force at the fall, the position of the body and the presence of obstacles in the place of fall.

Fracture of lower limb

A fracture of the leg during pregnancy is one of the most severe and "uncomfortable" injuries. On the frequency of fractures of the legs of pregnant women occupy the second place among similar injuries in expectant mothers. Most often, the foot and ankle suffer, but more severe fractures also occur - a fracture of the neck of the hip, thigh, and lower leg [5,6].

Fracture of ribs

Very often, expectant mothers are concerned about pain in the ribs in late pregnancy. Getting a broken rib during pregnancy due to an injury is quite real. The main causes of fracture of the ribs - a stroke or a strong contraction in the chest area (with a fall, an accident or a strong embrace).

Injuries of the spine, pelvis and skull in pregnant women

Such injuries are very rare, mainly in road accidents or other emergencies. If you suspect a trauma in any way, you cannot move the victim, change the position of the body or try to raise yourself. With such injuries, pregnancy is retained only if there is no threat to the mother's life [7].

What increases the risk of fractures in pregnant women?

Many believe that during pregnancy, the calcium level in the blood necessarily decreases due to the increased needs of the pregnant and growing fetus, so that its bones become brittle and often break down. In fact, nature has provided protective mechanisms, and during the gestation of the child, the mother's skeleton acquires special properties that allow to maintain the strength of bone tissue in conditions of increased calcium consumption. However, there are diseases in which the brittleness of bones increases - osteoporosis, incomplete osteogenesis, disruption of mineral metabolism. In such cases, even a slight impact or an awkward movement can lead to a fracture.

X-ray in the case of a fracture in pregnant women – to do or not to do?

In fractures, the main method of diagnosis is an x-ray in two projections. But if this is a fracture of a pregnant woman, then when an X-ray is assigned to a future mother, there are doubts about the safety of this procedure for her baby. In fact, until now, the X-ray remains the most accessible and reliable way to diagnose fractures (ultrasound of bones is possible only with the availability of special equipment, and the accuracy of diagnosis depends on the skill of the doctor). Therefore, pregnant women are provided with ways to protect the fetus during the procedure - the mother's stomach is always protected with a lead apron preventing the effect of radiation on the fetus. At the gestational age of up to 12 weeks, the roentgen is prescribed only if it is impossible to diagnose the fracture on the basis of examination or according to vital indications [8].

Treatment of a fracture

Fractures in pregnant women are recommended to be treated with submerged osteosynthesis. This allows the woman to retain mobility, and also reduces the risk of thromboembolic complications [9].

Fracture of the spine usually occurs in the area of the lower pectoral or the first three lumbar vertebrae. This may require an open reposition of fragments, arthrodesis or the imposition of a plaster corset. Women with a fracture of the spine give birth through natural birthmarks. In cases of unstable fractures, when cervical spinal cord injury is possible, caesarean section is shown [10].

Fracture of the pelvis: In uncomplicated fractures, symptomatic treatment is performed. With multiple fractures with displacement of fragments, extensive retroperitoneal hematoma, damage to the birth canal, rupture of the urethra or bladder are possible. In severe fractures of the pelvic bones, surgical intervention is indicated only in the case of refractory hypovolemic shock. The cause of shock in this case is often bleeding from the upper gluteal artery. Since it is difficult to bandage, stopping bleeding is achieved by ligation of the internal iliac artery. However, this reduces placental blood flow, which leads to intrauterine hypoxia. Thus, if the fetus is alive and the ligation of the internal iliac artery is necessary, a caesarean section is indicated. In 10 - 15% of cases of fractures of the pelvic bones, the bladder or urethra is damaged. After excluding damage to the urethra, a urinary catheter is installed and retrograde cystography is performed. If damage is found, they are sutured. In unstable fractures of pelvic bones and fractures with displacement, the caesarean section is shown, since labor through natural birth can lead to damage to the pelvic organs. A pelvic fracture in an anamnesis is not considered an absolute indication to a caesarean section. If there is no deformity of the pelvic bones with X-ray pelvimetry, labor is possible through the natural birth canal. In most cases, they go without complications [11].

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In case of fracture of the upper limb, a plaster bandage or a lingeta is usually applied in pregnant women (depending on the localization of the fracture). Sometimes the displacement of fragments of a broken bone is very strong and for their correct alignment, an operation is required. In this case, the traumatologist together with the gynecologist decides on the tactics of treatment, the possibility of surgical intervention and, depending on the gestational age at which the fracture occurred, the tactics of labor management.

Treatment of fracture of the lower limb in pregnant women is usually complicated by the need for prolonged immobilization and extension. Along with gypsum bandages often used apparatus for compression-distraction osteosynthesis (spokes, plates, Ilizarov apparatus). Depending on the timing of the pregnancy and the severity of the fracture, the doctors in each particular case make a well-considered decision about the possibility of performing an operation and determining the tactics of labor if the fracture occurred late.

Corset plaster bandages during pregnancy are rarely applied. In uncomplicated fractures of ribs tight bandage with elastic bandage or special bandages are more often used [12]. A strong fracture of the rib with displacement can lead to rupture of the pleura and even trauma to the lung. In this case, there are other symptoms - scarlet foam on the lips, pneumothorax, bleeding. Such a condition requires the immediate assistance of a qualified specialist [13].

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