Abdominal gunshot wound in pregnant woman: a case report

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Abstract

Objective: A case which was injured during the civil war in Syria and had intrauterine penetrating ankle trauma was presented.

Case: Twenty-year-old pregnant woman who was at 37 weeks of gestation and had abdominal gunshot wound was reached to Turkey border through their own means and brought to the emergency service of our hospital by Turkish ambulance. Upon the detection of intraabdominal bleeding and live fetus by USG in the emergency service, she was taken to the operating room. Bullet entrance hole was seen in the uterus, and it was found out that there were bullet entrance and exit holes only on the left ankle of the baby which was taken out alive. While uterus was being repaired, the ankle of the baby was plastered by an orthopedist simultaneously. The mother and the baby were discharged on fifth day when their hemodynamics was observed as stable. It was seen that both mother and baby were healthy on the first month follow-up. However, their further follow-ups could not be done since the mother and the baby returned to their country.

Conclusion: Although the mortality rate of penetrating abdominal traumas during pregnancy is high both for mother and the fetus, there was no life-threatening condition for the mother and the fetus in our case, and their postoperative follow-up was normal.

Keywords: Pregnant, abdominal gunshot wound, penetrating trauma.

Özet: Gebe hastada abdominal kurşun yaralanması: Olgu sunumu

Amaç: Suriye'de iç savaş sırasında yaralanan ve intrauterin penetran ayak bileği travması olan bir vaka sunuldu.

Olgu: Yirmi yaşında, 37 hafta gebeliği olan ve abdominal ateşli silah yaralanmasına maruz kalan anne, kendi imkanlarıyla Türkiye sınırlarına ulaştırılıp Türk ambulansları ile hastanemiz acil servisine getirildi. Acil serviste USG ile batın içi kanama ve canlı bebek görülmesi üzerine hızlıca cerrahiye alındı. Uterusta kurşun girişi görülüp, canlı olarak çıkarılan bebeğin sadece sol ayak bileğinden kurşun girişi ve çıkışı yarası olduğu saptandı. Annede uterus tamiri yapılırken eş zamanlı olarak ortopedi uzmanı tarafından bebeğin ayak bileği alçısı yapıldı. Anne ve bebek hemodinamikleri stabil olması üzerine 5. gün taburcu edildiler. Birinci ay takipte anne ve bebeğin sağlıklı olduğu görüldü. Ancak daha ileri takipler anne ve bebeğin ülkelerine dönmesi nedeniyle yapılamadı.

Sonuç: Gebelikte penetran abdominal travmaların hem anne hem de fetus için mortalitesi yüksek olsa da bizim vakamızda anne ve fetüste hayatı tehlike oluşmamış, postoperatif takipleri normal seyretilmiştir.

Anahtar sözcükler: Gebe, abdominal kurşun yaralanması, penetran travma.

Introduction

While the rate of trauma during pregnancy is about 6-7%, 4-8% of all trauma cases are pregnant patients. Fetal mortality varies between 3 and 38% in blunt traumas, and it can be observed in mother without a prominent

damage. In 2002, 4.1 per 1000 deliveries in the USA was caused by traumas, and totally 16982 cases were reported.^[1] In 2004, the traumas caused 13 out of 100,000 babies to die in the USA.^[2] The reason of 46% of trauma-associated maternal deaths is abdominal trauma.^[3-7]

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The most common trauma reasons during pregnancy are motor vehicle accident (49%), falling down (25.5%), assault/rape (18%), firearm injury (4%) and burn (1%).^[2] The risk factors in obstetric traumas are younger age, substance use, alcohol addiction, and domestic violence.^[8-11] About 19-24% of trauma patients were traumatized under the influence of substance or alcohol.^[1]

Today, depending on the increase of the violence in the whole world, trauma cases during pregnancy have been increasing. In this report, we are presenting a rare case of gunshot wound of pregnant and fetus.

Case Report

Twenty-year-old pregnant woman who was at 37 weeks of gestation and had abdominal gunshot wound was reached to Turkey border through their own means by vehicle and brought to the emergency service of our hospital by Turkish ambulance waiting 24/7 at the container camp. At the first inspection in the emergency service, single bullet entrance hole was seen but there was no exit hole. The pulse was 106/m, arterial tension was 106/67 mmHg, and SpO₂ was measured as 97%. She was conscious, and her neurological examination was assessed as normal. Her Glasgow coma score was 15. In the common ultrasound performed by a gynecologist, general surgeon and a radiologist, hemorrhage was observed in the abdominal region and it was detected that the baby was alive. The patient was taken to emergency surgery for laparotomy purpose. Blood sample

was drawn from the patient for analyzing hemoglobin value, blood type determination and blood replacement. General anesthesia was done by propofol and rocuronium. Hemoglobin value was 11.1 mg/dL in the arterial blood gas, and other values were normal. Foley catheter was put before the operation, and incoming urine was observed as clear. Since the patient has a wound with high energy, hypogastric midline incision was preferred for the exploration of intraabdominal organs instead of Pfannenstiel incision. After the incision made in accordance with anatomic layers, penetrating wound was seen on the left corpus of uterus (**Fig. 1**). After the delivery through regular cesarean section made by the gynecologist, liver, stomach, small intestines, colon and retroperitoneum were all intact. When it was found out that hemoglobin value was 10.6 during the operation, no blood replacement was done; only fluid replacement was done by crystalloid and colloids. Biochemical values were at normal range. First and fifth minute APGAR scores of the baby were found as 9 and 10, respectively. The baby was examined by the orthopedist as soon as possible after the operation and the ankle of the baby was plastered and the orthopedist recommended to follow-up (**Fig. 2** and **3**). It was also observed that there was no other organ injury in the abdominal region. After standard closure, the patient was awakened in the operating room. With no problem in the recovery, the patient was transferred to the service. The mother and the baby were discharged on fifth day when since there was no problem was observed in their follow-up.

Fig. 1. Bullet entrance hole and uterus.

Fig. 2. Bullet entrance hole on baby.

However, further follow-ups of the mother and the baby could not be made as they returned to country and it was not received any news about them.

Discussion

Trauma during pregnancy is highly complicated, and the approach towards patient is quite different than standard traumas. In the physical examination, all patients should be approached as in non-pregnant cases. Gestational uterus examination should be confirmed by tests such as HCG and ultrasound. Especially in the traumas of fertile women, HCG test should be certainly done to every woman due to the possibility that they may be unaware of their first trimester pregnancy. In 2nd and 3rd trimester pregnancies, week of gestation and fetal sizes are determined by USG instead of HCG. Fetal heart rate should also be monitored. Classical ABCDE algorithm (airway, respiratory, circulation, neurological examination and cleaning wound site) should be applied. Then, blood tests can be carried out. Fetal heart rate is followed up. However, all these steps are valid for the patients with blunt abdominal trauma. While fetal heart rate and USG are more important in blunt traumas, most appropriate approach in penetrating traumas is the emergency surgery. For a more detailed approach, surgical exploration is a better choice for epigastric traumas since visceral damage more ordinary while the approaches such as observation, laparoscopy, wound site exploration etc. are more appropriate as a conservative approach according to the maternal and fetal conditions in the hypogastric traumas.^[12,13] In our case, since hemodynamics of mother was stable, bullet entrance hole was on hypogastric region, we gained time to carry out ultrasound examination. Upon observing bullet entrance hole on uterus and fluid compatible with intraabdominal hematoma during the ultrasound, the patient was taken to emergency surgery. In the meanwhile, no fetal distress was observed.

Due to the enlargement and anterior position of uterus, pregnant women are more prone to penetrating abdominal trauma. Ironically, since it protects intestine and wide veins, it also protects mother. In our case, in terms of the bullet entrance hole, it is quite likely that the intestine and wide veins would be damaged if the woman was not pregnant. Another lucky condition is

Fig. 3. The radiography of baby's foot.

that the bullet only damaged the ankle of fetus and caused no life-threatening condition (**Fig. 2**).

Penetrating traumas during pregnancy are rarely seen compared to blunt traumas. In such traumas, there is a distinct contradiction between maternal prognosis and fetal prognosis.^[14,15] Fetal death rate in penetrating traumas may reach up to 60%.^[16] The reason for intrauterine fetal death is direct fetal damage or placental/cord injury. On the other hand, maternal mortality rate is lower.^[14] Maternal prognosis depends on the number of bullet entrance hole in gunshot wound, number of wounded organs and the length of time elapses until operation. Intestine is the mostly injured organ.^[17] In our case, non-existence of any injured organ and single bullet entrance hole in the mother kept prognosis well despite the long time elapsed until the operation. Fetal activity also contributed to the prognosis.

Although ultrasonographic examination is as effective as computed tomography in blunt abdominal traumas, ultrasonographic examination cannot show all fetal injury types as in our patient in case of peritoneal perforation.^[18] Since it is impossible to know the intraabdominal path of high-energy penetrating particle, it is useful to do laparotomy by midline incision. As especially the uterus of a pregnant may repress ultrasonographic findings directing laparotomy and may

cause a delay, it may result with the increase of mortality and morbidity.

Conclusion

Although the mortality rate of penetrating abdominal traumas during pregnancy is high both for mother and the fetus, there was no life-threatening condition for the mother and the fetus in our case depending on many factors discussed above, and their postoperative follow-up was normal. It can be said that the mother is a lucky casualty of an unlucky society.

Conflicts of Interest: No conflicts declared.

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