Gunshot wound in pregnancy

Emre S. Gungor, MD, *Sebnem Sen,* MD,
Ozlem Uzunlar, MD, *Nuri Danisman,* MD.

Gunshot wounds to the gravid uterus and fetus are becoming more common. In most cases, a pregnant uterus is a target in the second and third trimester. The gravid uterus often shield other maternal organs, and the mother may survive such injuries while the fetus is effected.[1] Survival of the infant depends on the type of injury, degree of intrauterine asphyxia, maturity, and postnatal course.

A 16-year-old woman, gravida one with an intrauterine pregnancy at 24 weeks gestational age was presented to the emergency department with perforating gunshot wound. Physical examination revealed an entrance wound in the lower abdominal quadrant. Vital signs were stable. The abdomen was soft, there was no vaginal bleeding, and bowel sounds were present. Fetal heart tones were also active. She was taken to the operating room for exploratory laparotomy. During laparotomy, the 23-24 week gravid uterus had transverse wound in the anterior wall approximately 1 × 1 cm width, and myometrium was injured by half of its thickness. Bleeding was mild and the repair of the uterine wound was undertaken with 8 sutures resulting to good hemostasis. The abdominal cavity was explored, and no other viscus injuries were noted. Her postoperative course was uneventful. Tocolytic treatment was given in her first postoperative day. She was discharged on the third postoperative day and was afterward scheduled for routine antenatal follow up. The patient had a spontaneous labor at 40th week of gestation where she delivered a normal viable 3240 gm male infant by elective cesarean section. During the cesarean procedure, a uterine scar due to gunshot wound was observed (**Figure 1**).

A nongravid uterus, protected by a bony pelvis, is rarely injured by a penetrating wounds of the abdomen. However in a pregnant woman, the uterus grows and occupies more space in the peritoneal cavity, and displaces other organs. A large gravid uterus, acts as a shield to a mechanically displace bowel away from the bullet's path.[2] Due to this factor, the rate associated to maternal visceral injury is low, ranging from 19-38% in approximately 5 series, and there was no maternal deaths reported since 1912.[2] As pregnancy progresses, the fetus presents a larger target, and is more likely to sustain injury. Fetal injury may range from trivial to fatal. Rapid assessment of

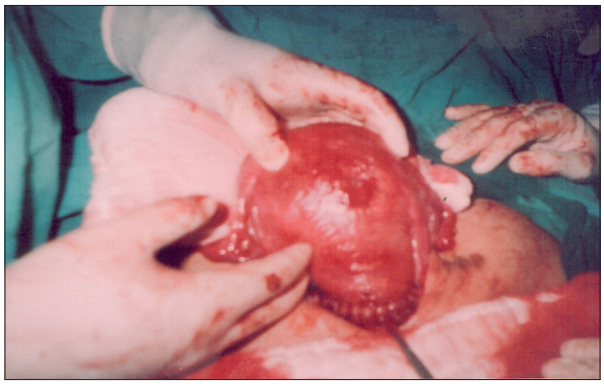

Figure 1 - Gunshot wound scar above the cesarean sutures.

fetal well-being concomitant with the evaluation and treatment of maternal injury is essential. In several series, the incidence of fetal injuries was between 59% and 89%, approximately half of which was serious.[3] Perinatal mortality was in the range of 47-71%.[4]

Management of a gunshot wound during pregnancy must take 2 patients into account: the mother and the fetus. The physician must consider the maternal physiologic changes that occur during pregnancy. In general, the gunshot wounds to the abdomen are surgically immediately explored.[2] Some trauma surgeons proposed an expectant management for selected patients. Iliya et al[5] noting the particularly low incidence of visceral injury in pregnant women shot in the abdomen, proposed the following criteria for conservative management: the fetus is dead, the entrance wound is below the level of the fundus, and the maternal evaluation is reassuring (normal vital signs, stable hematocrit, soft abdomen, no blood in the gastrointestinal or urinary tract). Caution must be exercised since signs of peritonitis and hypovolemia may be masked by the altered physiology of pregnancy. At the time of celiotomy, conservative management of a second trimester fetus, killed by gunshot wound, is the preferred course of action. The performance of cesarean section significantly increases blood loss and operative time. Cesarean should be performed only if the size of the gravid uterus prohibits adequate exploration or repair of maternal injuries or the infant is mature, and is suspected to have injury in utero. Risks related to conservative management could include coagulopathy and intrauterine infection. In such a case, the patient should be followed closely and the fibrinogen levels, fibrin split products, and coagulation times should be monitored.

In our case, the child was fortunate that the bullet entered the abdomen transversely, and there was no

wound with the fetus. For the mother as the entrance of the bullet was in the lower abdomen, no other visceral injuries were sustained. In this case, since the myometrium was not injured to a full thickness, the pregnancy was allowed to progress its term. When a pregnant woman has penetrating trauma to her lower abdomen, ultrasound examination may provide an important information on the condition of the fetus. A foreign body, for example, a bullet, can be visualized. Although still uncommon, patients with gunshot injuries to the gravid uterus are appearing in large numbers in emergency departments. Obstetric consultants will continue to be called upon to manage both injured reproductive tract and the pregnancies contained within. Management should be highly individualized according to sound obstetric and surgical principles, and depends on both fetal and maternal indications.

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From the Zekai Tahir Burak Women's Health Education and Research Hospital, Ankara, Turkey. Address correspondence and reprint requests to: Dr. Emre S. Gungor, Oran Sitesi 69. Sokak No: 5/9, Ankara, Turkey. Tel. +90 (312) 4912894. E-mail: drsinangungor@hotmail.com

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