

Domestic Violence Causing Abruptio Placenta and Feto-maternal death: Case report on Autopsy

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Abstract

A 22 year old primigravida with 28 weeks/ 7 months pregnancy was brought in police custody 10 hours after her death reported at a Tertiary Care Center, Karachi. There was a history of soft tissues direct abdominal trauma 10 hours back. On complete physical examination there were no external marks of violence except a contusion on her back of 5 cm diameter. The internal examination after opening the uterus, placenta was separated and baby was delivered after opening the amniotic sac. A fresh still birth of male baby with 1.5 kg was delivered. The chemical and histopathology report evidenced that uterus, fallopian tubes and ovaries had decidua with necrotic tissues, edema and congestion. The final opinion after receiving the chemical/histopathology reports on this post mortem was that the death occurred due to fetal hypoxemia developing secondary to maternal shock as a result of direct uterine trauma and disseminated intravascular coagulation (DIC). DIC develops due to circulating placental products responsible for fetal losses.

This case reports fetal hypoxemia developing secondary to maternal shock, maternal hypotension, abruptio placentae, direct uterine trauma and disseminated intravascular coagulation (DIC).

Keywords: Non-obstetrics trauma, domestic Violence, pregnant women, disseminated intravascular coagulation, feto-maternal death, autopsy. (ASH & KMDC 19(2):106;2014).

Introduction

The incidence of trauma during pregnancy is (5%) and causes (6-7%) of maternal deaths due to non-obstetric reasons¹. Trauma is the leading non-obstetrical cause of fetal and maternal death. The effect of soft tissues direct abdominal trauma during pregnancy is life-threatening for both mother and fetus. Several studies have shown major causes of maternal injury are blunt trauma,

penetrating trauma, burns, falls, motor vehicle accidents, homicides, domestic violence, penetrating wounds and physical assaults². However, fetal mortality and morbidity has been dependent on maternal injury. Pakistan Health Demographic Survey (PHDS) 2012-2013 reported overall, 39 percent of ever-married women age 15-49 had ever physical and/or emotional violence from their spouse³. Mild to severe fetal injury may occur even with mild soft tissue direct blow or trauma during pregnancy in late second and third trimester of pregnancy. Further, trauma may lead to intrauterine fetal demise, abortions, preterm delivery or separation of placentae.

Case Summary

A 22 year old female was brought in the Department of Forensic Medicine, at a Tertiary Care Center, Karachi, 10 hours after her declared death

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in Police custody. She appeared to be of a healthy, medium built, average height and weight. She was married since one year, Primigravida and pregnant for seven months. There was a history of trauma inflicted by kicking with shoes at her lumbosacral area. Due to this blunt strike over abdomen she fell down on floor. Later she became unconscious and was shifted to hospital for treatment but she expired in 8 to 10 hours. On physical external examination the surface injuries showed an abraded contusion of size 5 cm in diameter only on her back. However, the internal examination, of head, chest, and neck showed no evidence of physical violence or trauma. The abdomen was distended remarkably.

The positive internal findings were observed after a midline incision given in abdomen and uterus was opened by low transverse incision. Uterus was found corresponding to 28 weeks of gestation. There was a fresh stillbirth and placenta found separated completely from fundal area with excessive amount of blood at retro-placental area. There was a complete intrauterine termination of pregnancy with separation of placenta within the uterus. Placental tissues were distorted, broken at venous sites which were preserved as a whole for histopathology. An incision was given in the amniotic sac, dark straw colored fluid observed and fresh stillborn baby delivered. Baby boy weight was 1.5 kg. The length of baby was about 35 cm, abdominal circumference 21 cm and head circumference 26 cm. There was no fetal structural congenital abnormalities seen on physical examination and baby corresponded to 27 week of gestation. The chemical report of blood clots was negative for detection of poison. Blood biochemistry reports were not available. Histopathology reports of uterus with fallopian tubes, ovaries and placenta showed positive findings. Uterus, fallopian tubes and ovaries showed necrotic tissues, edema and congestion. There was congestion and haemorrhage in heart and coronaries with mild to moderate atherosclerosis, otherwise heart showed no significant changes. The final opinion after receiving the chemical/histopathology reports on this post mortem was that the death oc-

curred due to soft tissues abdominal trauma which resulted into intrauterine bleeding and fetal death leading to cardiorespiratory failure and maternal death within 10 hours. The permission for this case report was taken from the police surgeon, Department of Forensic medicine, Jinnah Postgraduate Medical Centre, Karachi.

Discussion

The incidence of trauma during pregnancy is increasing due to social, economic and domestic conflicts. Trauma has been reported in (3-7%) of all pregnancies and (0.4%) need hospitalization⁴.

In this case report an intrauterine termination of pregnancy occurred due to non-obstetrics trauma and feto-maternal death confirmed on autopsy. Several studies have shown non-obstetrics trauma cases leading to silent feto-maternal mortality including El-Kady D et al., reported that more than 9 cases of trauma occurred during the last trimester⁵. However, in this case report the victim was in second trimester of pregnancy. The soft tissue abdominal direct blow may have been associated with separation of placenta and baby within the uterus and may have remained unidentified on examination. This is a significant factor in the history taking, physical examination and emergency management in the initial phase, which may be missed if careful details are not taken as in this case. Hence an expertise in knowledge and skills was required for the diagnosis and management of the non-obstetric trauma involving the mother and the baby immediately so as to save the life of the mother at risk and her baby.

Tinker SC et al⁶ reported falls in (51.6%) in the 2nd and 3rd trimesters. In this case also the victim also fell down on floor after blunt strike on her lumbosacral region which may have been associated with the direct trauma on abdomen and uterus leading to fetal demise after complete separation of placenta.

Connolly AM et al⁷ reported assaults in (21%) of pregnant women. Currently PHDS 2012-13³ re-

ported violence during pregnancy (8.4%) in urban and (12.1%) in rural areas. Violence is more common in women of 15-19 years followed by (12.5%) in 30-39 years. PHDS also reported other risk factors which included (16%) among mothers with number of living children more than five, no maternal education in (13.4%) and second wealth quintile (15.2%). Wealth quintile are obtained by assigning household scores, ranking each person in the population and then dividing the ranking into five equal categories from lowest to highest. One in 10 women report violence during pregnancy in Pakistan. Fifty-two percent had physical domestic violence but never had medical and social support. Since domestic violence mild to moderate have never been reported and managed it is more likely to receive fatal cases in emergency which require proper management and training of health care providers³.

This case explored risk factors of non-obstetric trauma at 22 years, no education, no alive children, lowest wealth quintile and domestic violence. In this case age and conventional domestic violence were the risk factor for the sad demise of mother and baby. In the case presented here, the etiology of fetal loss was direct fetal injury, fetal hypoxia related to domestic violence. The ratio of trauma-related fetal mortality is (65%)⁸. The approach to the trauma is dependent on the most common cause of fetal loss i.e. fetal hypoxemia developing secondary to maternal shock, maternal hypotension, abruptio-placentae, direct uterine trauma and disseminated intravascular coagulation (DIC). DIC develops due to circulating placental products responsible for fetal losses. Shah et al⁹ reported maternal death rate as 3.5% and Esposito et al¹⁰ reported fetal death rate (5%). We have reported this feto-maternal morbidity to create an awareness regarding violence during pregnancy. This case report also highlights the comprehension of knowledge and skills to manage non-obstetric trauma cases in emergency room by health care providers.

Conclusion

This case report focusses on the fact that non-obstetrics trauma may lead to fetal hypoxemia developing secondary to maternal shock and feto-maternal death. An immediate management of non-obstetrics trauma care in emergency should be deliberated by emergency care management staff at all health facilities to save mother and child.

References

1. Karada S, Gonullu H, Oncu MR, Kurdoglu Z, Canbaz Y. Pregnancy and trauma: analysis of 139 cases. *J Turk Ger Gynecol Assoc* 2012;13:118-22.
2. Oxford CM, Ludmir J. Trauma in pregnancy. *Clin Obstet Gynecol* 2009;52:611-29.
3. National Institute of Population Studies (NIPS) [Pakistan] and ICF International. Pakistan Demographic and Health Survey 2012-13. Islamabad, Pakistan, and Calverton, Maryland, USA: NIPS and ICF International; 2013.
4. Bard MR, Shaikh S, Pestaner J, Newell MA, Rotondo MF. Direct fetal injury due to airbag deployment and three-point restraint. *J Trauma* 2009;67:98-101.
5. El-Kady D, Gilbert WM, Anderson J, Danielsen B, Towner D, Smith LH. Trauma during pregnancy: An analysis of maternal and fetal outcomes in a large population. *Am J Obstet Gynecol* 2004;190:1661-8.
6. Tinker SC, Reefhuis J, Dellinger AM, Jamieson DJ, National Birth Defects Prevention Study. Epidemiology of maternal injuries during pregnancy in a population-based study, 1997-2005. *J Womens Health (Larchmt)* 2010;19:2211-8.
7. Connolly AM, Katz VL, McMahon MJ, Hansen WF. Trauma and pregnancy. *Am J Perinatol* 1997;14:331-6.
8. Brown HL. Trauma in pregnancy. *Obstet Gynecol* 2009;114:147-60.
9. Shah KH, Simons RK, Holbrook T, Fortlage, Fortlage D, Winchell RJ, et al. Trauma in Pregnancy: Maternal and Fetal Outcomes. *J Trauma* 1998;45:83-6.
10. Esposito TJ, Gens DR, Smith L, Scorpio R, Buchman T. Trauma During Pregnancy: A Review of 79 Cases. *Arch Surg* 1991;126:1073-8.