Online publication ahead of print, AJMHS Vol 63, 2023

Splenic Rupture during Childbirth as a Medico-Legal Issue. Case report and review of literature

Arben Lloja*, Elmas Shaqiri, Albina Ndoja, Leart Berdica, Teona Bushati

Department of Pathologic Anatomy and Forensic Medicine, Faculty of Medicine, University of Medicine, Tirana, Albania

Abstract

Post-traumatic complications with closed trauma of the abdomen as a result of rupture of the spleen followed by an extreme surgical emergency of the abdomen during the application of manipulative procedures or "crystal" elbow compression on the woman's abdomen during the act of childbirth are very rare.Splenic artery rupture during pregnancy and after childbirth carries a high maternal mortality. For this reason it is very important that the diagnosis must be made as soon as possible in order to prevent the fatal consequences.

Keywords: Rupture, Pregnancy,Splenic rupture,childbirth, obstetrical risk

Address for correspondence: Arben Lloja*, Department of Pathologic Anatomy and Forensic Medicine, Faculty of Medicine, University of Medicine, Tirana, Albania. E- mail: llojaarben@yahoo.com

INTRODUCTION

Spontaneous splenic rupture in pregnancy is a rare and potentially catastrophic event. As many as 76 cases have been identified in the past 190 years by a variety of authors (1).The first case of splenic artery rupture during pregnancy with fatal outcome to both mother and fetus was reported in 1869 (2). Posttraumatic complications with a closed belly trauma as a consequence of spleen rupture following an extreme surgical emergency of the abdomen during manipulative procedures or applying pressure over the womans belly during the act of giving birth are very rare and nearly don't count as complications on medical literature (3).

This case is about the death of a woman after giving birth, a birth manipulated by manual methods.Her death could be prevented if after the first clinical signs appeared,an abdominal ultrasound exam would highlight blood in her belly, so the patient would undergo surgical procedure, and the woman's life would be saved.

CASE PRESENTATION

The case under review describes the death of a 26-year-old woman without any previous illness, without physical data in favor of mechanical dystocia, in the obstetrics department, around 22 hours after she had given birth to her first child from a normal 40-41 week pregnancy. The above data are described and documented in detail in the relevant sections of the clinical card of this department, where it turns out that the progress of the pregnancy was good, with low obstetric risk without the presence of other diseasesof different systems or organs such as (circulatory system of the heart and blood vessels, erythropoiesis system, nervous system, respiratory system, digestive system, urogenital system, etc.) nor infectious pathology or systemic diseases, tumors, etch. The birth of the child was carried out in a natural way (per via vaginalis) potentiated with oxytocin followed dynamically in the antenatal and delivery department by senior and mid-level medical personnel who describe the condition every 30 (thirty) minutes of the woman. The woman delivered at 08:30 a.ma vital fetus, male with a round cord around the neck.

The expulsion of the placenta was normal, the perineal laceration wasrepaired. In the descriptions documented by senior and mid-level medical personnel, there are no references to obstetrical procedures or maneuvers during birth assistance. After the birth of the baby, the woman was in good condition, there was no hemorrhage, the uterus is described as contracted. At 6:00 p.m. of the same day, the woman had an episode of hypothermia, with sweat, laboratory exams were done which resulted in an altered RBC 2.960.000/mm3, Hgb 8.5grams/dl, hematocrite 26.1%, compared to the laboratory examinations in hospital which the results were erythrocytes 3.530.000/mm3, Hgb 10.1 grams/dl, hematocrite 31.2%, BP 90/70mmHg, no vaginal bleeding was noticed. The doctor on duty,did not find reasonable to inquire about the reason of this condition of the woman, thus he recommended her to just lie down. During the night, there are no

descriptions of the clinical course in the clinical record regarding the conditions of the lady.

At 06:45, about 22 hours after giving birth, the woman fell into a state of hemorrhagic shock, resulting in her death. Clinical diagnosis was suspicion for cerebrovascular accident.

By decision of the Prosecutor's Office, the woman underwent a forensic autopsy. In the forensic autopsy report, was found: In the external examination, it is evident that the skin and mucous membranes are pale.

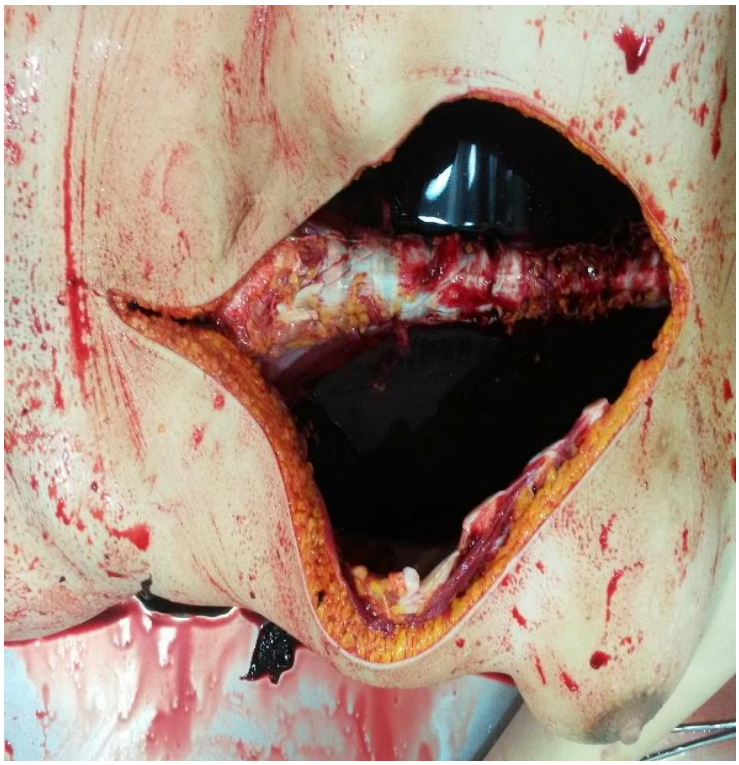

Figure 1. The presence of blood in the abdominal cavity (hemoperitoneum).

Figure 2. Rupture of the spleen in the hilar portion.

After opening the abdominal cavity, a large amount of hemorrhagic fluid (hemoperitoneum) is observed [Figure 1 & 2]. Spleen of normal size, damage to the splenic capsule and blood vessels, in the splenic hiluscontusion of its tissue on the posterior surface is observed. Coagulated and liquid blood can be seen around the spleen. Uterus with increased volume with dimensions above the norm. The other organs were pale. Hyperemic, velvety, cherry-colored endometrium. The cause of death of the patient was severe traumatic-hemorrhagic shock.

DISCUSSION

The basic problem of splenic rupture in pregnancy and after childbirth is its late diagnosis. Splenic artery rupture during pregnancy carries a maternal mortality of 75%, a much higher incidence than among nonpregnant women (25% between 1960 and 1970) and a fetal mortality of 95% (4). Diagnosis of splenic artery aneurysm and/or rupture during pregnancy or labor is extremely difficult (5).Sudden collapse of a pregnant patient may be diagnosed as pulmonary or amniotic fluid embolism while abdominal pain and anemia may suggest placental abruption or uterine rupture (6).

The symptoms may be vague pain in the epigastrium or the left side, nausea, vomiting, constipation, or diarrhea and dyspepsia. These are strongly indicative of intra-abdominal catastrophe when rupture has occurred (7).

In our case about twelve hours after birth correlated with complaints of a state of hypothermia with a pronounced decrease in arterial pressure with a response to the laboratory exams in favor of an acute anemia, without hemorrhage of the birth canal suggested urgent obstetric surgical measures and resuscitation to find the source of hemorrhage through ultrasound exam, surgical consultation, taking measures of resuscitation of the patient, replacing the volume of lost blood correlated with the answers of the laboratory examination, liquid therapy, calcium etch. and indicated the urgent surgical intervention of opening the abdominal cavity through laparotomy, medial incision, where after the detection of blood in the abdominal cavity (hemoperitoneum, which was initially in paucity), its evacuation would evident the laceration (rupture) of the spleen and blood vessels in the splenic hilus, performing the splenectomy.

This material basically discusses the increase of attention and care that medical personnel must show to the prevention of medical errors during clinical activity at the time of diagnosis, their consequences and patterns in order to prevent liability.It is important to consider that many malpractice lawsuits predict that a patient or family member will more likely go to trial when there is a poor relationship with the clinician and the patient/or family member feels that they are not being kept informedby the clinician.

The patient/family thinks that the event happened suddenly like a bolt from the blue, as if the doctor knew about it and did not tell him.Even the development of jurisprudence in the field of error

in diagnosis has recognized advantages as well as the development of medicine itself.

At the beginning of the 20th century, there was talk about the doctor's responsibility in a diagnosis error only in case it was very obvious and brought great failure, because in determining the diagnosis, a more attentive control and more serious knowledge do not protect the doctor from the error. It should be emphasized that the diagnostic tools at that time were limited.

Nowadays, as in the case we are discussing, it has been easy to diagnose in real time not only for the clinic, the laboratory framework and the advanced and modern diagnostic tools that are available.

As previously indicated, we think that by looking for an explanation for this phenomenon, we come to the conclusion that many processes of taking responsibility of personnel could be prevented or avoided if, after an event, the injured or his relatives would receive the correct and honest explanations, about the circumstances and possible causes, instead of them encountering the "wall of silence", and "abandonment" after the event."A carelessly determined diagnosis, neglecting the collection of necessary or simply useful data, without using the procedures required by science, is a source of responsibility."

The current case presents a rare post-traumatic obstetric complication after the application of a manual obstetric pressure maneuver (abdominal compression) to accelerate the act of delivery, which about twelve hours after delivery showed the first signs with a decrease in blood pressure values, a state of lipothymia , profuse sweat and drop in blood count.

The absence of bleeding from the birth canal suggested the presence of a source of bleeding of a non-obstetric nature.The medical staff did not take the necessary measures to diagnose the surgical emergency through ultrasound examination, surgical consultation, taking resuscitation measures and performing splenectomy.

Based on the data mentioned before, it is necessary that even when faced with an unexpected one, the obstetrician-gynecologist must adjust it to acceptable conditions and be able to stop the bleeding.And, in case he cannot do this himself, he must leave his patient either immediately, or later, in the hands of an abdominal surgeon who knows this type of surgery.

In this particular case, the post-natal medical check-up of the patient was insufficient. This control should be provided better by the specialist himself, or the doctor on duty when he is absent.

It is imperative that any possible complication is detected early by daily check-up visits and observation.Regarding the current case, the complication was easily evident by the senior medical staff and if the necessary medical measures had been taken, her death would have been avoided.

Efforts should be focused on preventive measures and early detection of the complication, which requires emergency surgical intervention.

Nowadays, the doctor has available tools and methods to determine the diagnose and treat any disease. He must use the techniques, the data extracted for diagnosis in accordance with the advanced contemporary scientific achievements, theoretical and practical.One of the merits of the medical liability processes has been the formalization of the individual responsibilities of each physician (8,9). The prevention of forensic risk goes, first, from the prevention of medical accidents. The doctor must take all possible measures to avoid being held liable.The norms and work of the doctor cannot remain within the scope of acquired habits, which cannot in any case justify diagnostic errors (10).When the diagnosis is wrong or slightly incorrect, asking for a professional second opinion, even if it hurts the professional pride, reduces the risk of error.

CONCLUSION

Splenic artery rupture during pregnancy and after childbirth carries a high maternal mortality. For this reason it is very important that the diagnosis must be made as soon as possible in order to prevent tha fatal consequences. It is imperative that any possible complication is detected early by daily check-up visits and observation. Efforts should be focused on preventive measures and early detection of the complication, which requires emergency surgical intervention.

Based on the above data, it is necessary that even when faced with an unexpected one, the obstetrician-gynecologist must adjust it to acceptable conditions and be able to stop the bleeding.

And, in case he cannot do this himself, he must leave his patient either immediately, or later, in the hands of a surgeon who knows this type of surgery. In the specific case, the post-natal medical examination of the citizen has been insufficient. This control should be provided better by the specialist himself, or the doctor on duty when he is absent. In the case we are discussing, the complication was easily evident by the senior medical staff and if the necessary medical measures had been taken, her death would have been avoided.

Acknowledgements: None declared.

Conflict of Interest Statement: The authors declare that they have no conflict of interest.

REFERENCES

1. McCormick GM, Young DB. Spontaneous rupture of the spleen: a fatal complication of pregnancy. The American Journal of Forensic Medicine and Pathology 1995;16(2):132-4.

2. O'Grady JP, Day EJ, Toole AL, Paust JC. Splenic artery aneurysm rupture in pregnancy. A review and case report. Obstetrics and gynecology 1977;50(5):627-30.

3. Touré B, Ouattara T, Ouédraogo A, Ouédraogo CM, Koné B. Rupture de rate au cours de l'accouchement: À propos d'un cas observé.

Journal européen des urgences 2004;17(2):87-9.
4. Lowry SM, O'Dea TP, Gallagher DI, Mozenter R. Splenic artery aneurysm rupture: the seventh instance of maternal and fetal survival. Obstetrics and gynecology 1986;67(2):291-2.
5. Kreel L. The recognition and incidence of Splenic Artery Aneurysms A historical review. Australasian Radiology 1972;16(2):126-36.
6. Stanley JC, Fry WJ. Pathogenesis and clinical significance of splenic artery aneurysms. Surgery 1974;76(6):907-9.
7. Elbahraoui H, Bouziane H, Akrouch J, Ferhati D. Rupture de la rate au cours de l'accouchement: à propos d'un cas. Pan African Medical Journal 2011;9(1).
8. Selo-Ojeme DO, Welch CC. Spontaneous rupture of splenic artery aneurysm in pregnancy. European Journal of Obstetrics & Gynecology and Reproductive Biology 2003;109(2):124-7.
9. Christau S, Klebe JG. Rupture of the spleen during delivery. Acta Obstetricia et Gynecologica Scandinavica 1978;57(2):187-8.
10. Verspyck E. Que penser de la pratique de l'expression abdominale en 2008?. Gynécologie obstétrique & fertilité 2008;12(36):1171-4.