



New Approaches to Rehabilitation After Ectopic Pregnancy

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Abstract: The work includes the clinical comparative analysis of ectopic pregnancy's mortality cases caused by hemorrhagic shock and near miss. Current results contain morphological changes in the adenohypophysis which depend on the amount of hemorrhage and determine the direction of rehabilitation measures in a group of patients who experienced hemorrhagic shock.

Key words: ectopic pregnancy, hemorrhagic shock, adenohypophysis, rehabilitation.

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Abstract: Ectopic pregnancy is one of the medical and social problems of the present and is one of the five most common pathologies in the structure of maternal mortality (MS) in the world.

In the last decade, there has been a trend towards a steady increase in the frequency of VD throughout the world due to an increase in the incidence of inflammatory diseases of the pelvic organs, artificial abortions and early onset of sexual activity, and the introduction of programs of assisted reproductive technologies. The frequency of repeated ectopic pregnancy (WB) ranges from 4 to 12%. The most common localization of ectopic pregnancy is the fallopian tube (98.5%), the violation of the integrity of which can lead to massive bleeding that threatens the woman's life. The consequences of hemorrhagic shock are not limited to impaired blood supply, lymphatic drainage and innervation of the organs of the peripheral endocrine-dependent reproductive system (uterus – ovaries -pipes), but also underlie changes in the activity of the hypothalamus, pituitary gland, adrenal glands and, in general, determine the disorganization of the hierarchical principles of its functioning.

The foregoing determined the purpose of the study: to substantiate the need for pathogenetic approaches to rehabilitation in patients who almost died from massive bleeding due to an interrupted tubal pregnancy, to achieve which the following tasks were defined:

1. conduct a clinical analysis of maternal deaths and near miss cases due to massive bleeding during ectopic pregnancy;

2. to give a morphometric and immunohistochemical characteristic of adenohypophysis lesions in bleeding associated with interruption of tubal pregnancy and to determine their correlation with the amount of blood loss;

3. to substantiate the need for pathogenetic approaches to rehabilitation measures for patients who almost died from massive bleeding associated with ectopic pregnancy.

Material and research methods. A comparative clinical analysis of maternal deaths (MS) (n=12) and near miss cases (n=29) due to massive bleeding as a result of an interrupted tubal pregnancy was carried out. The results of macro and microscopic studies, data of morphological, morphometric and immunohistochemical studies were analyzed. Histological examination was carried out with a Bimam R-11 binocular microscope, followed by microphotography. Morphometric calculations were performed using the Statistica 6.0 software package from Statsoft.

Results and its discussion. The age composition of the patients who made up the cases of MS and "near miss" differed and was characterized by the prevalence in cases with a fatal outcome of women over the age of 30 years - 9 (75.0%).

In the "near miss" group of patients in the age range up to 30 years and from 31 years and older, there were an equal number - 14 (48.4%) and 15 (51.7%), respectively. Each patient who died from bleeding that developed as a result of rupture of the fallopian tube with the formation of hemoperitoneum had a history of pregnancies, of which only two (16.7%) gave birth, and the remaining 10 women (83.3%) had pregnancies ended with artificial (80%) and spontaneous abortions (20%). In the "near miss" group (n=29), hemorrhagic shock was also caused by an aborted tubal pregnancy with the development of intra-abdominal bleeding. Primigravida were 6 patients (20.7%). Previous pregnancies were observed in 23 women (79.3%). In 4 patients (17.4%) there was no history of childbirth, and the previous ones ended with artificial abortions. The patients giving birth in this group, in contrast to the cases of MS, made up the majority - 19 out of 29 (82.6%), while one and two births in the anamnesis occurred in an equal number of patients (in 9 out of 23 39.1%), three births were detected only in one patient (4.3%).

The timing of tubal pregnancy termination corresponded to the first trimester and averaged 7.4 ± 1.8 weeks of gestation in the MS group, and 6.8 ± 0.9 weeks of gestation in the "near miss" group. In more than 2/3 of the patients (in 8 out of 12, 66.7%) of the MS group, the disease began acutely in the form of a sudden attack of pain in the lower abdomen and loss of consciousness. Among nearly dead patients ("near miss"), hospitalization later than 24 hours from the moment of development of clinical symptoms was noted with a significantly lower frequency (6 out of 29 - 20.7%, $p < 0.05$).

The total volume of blood loss in both groups varied from 1000 to 3000 ml. Severe complications, which in the MS group determined the lethal outcome, and in the "near miss" group the development of critical conditions, were hemorrhagic shock and DIC. In the MS group, daily mortality occurred in 9 cases (75.0%), the remaining 3 women (25.0%) were in the hospital for more than 4 days. Microscopically, invasion of the interstitial cytotrophoblast was noted in the wall of the fallopian tube. In cases of incomplete tubal abortion in the fallopian tubes, there was a sharp plethora, blood clots and dark liquid blood in the lumen; among the blood folds, chorionic villi with dystrophic changes were often encountered.

In cases of complete tubal abortion in the abdominal cavity, chorionic villi were found among the blood clots. Fragmentation of the muscle layer with focal, extensive hemorrhages in the intermuscular spaces, exacerbation of chronic inflammation were noted in the fallopian tube. In the internal organs, as a rule, signs of hemorrhagic shock and DIC were detected. Massive bleeding led to disruption of the most important link of homeostasis - hemostasis, in which the imbalance of coagulation, fibrinolysis,

endothelial cells of the vascular bed and platelets was accompanied by the progression of bleeding and the development of DIC.

Convincing evidence of DIC syndrome that developed against the background of various volumes of blood loss was a comparable incidence of microvascular thrombosis. At the same time, a twofold increase in the specific percentage of microcysts, which were more common and larger in volume in cases of MS from blood loss in the volume from 2200 to 3000 ml, deserved attention.

Probably, the number of microcysts is directly dependent on the hypertrophy of basophilic cells.

Immunohistochemical data served as an important additional characteristic of the revealed hypertrophy of adenohypophysis basophils, which made it possible to specify the production of hormones by these cells depending on the volume of blood loss. So, in women with blood loss up to 2000 ml, using antibodies against adrenocorticotrophic hormone (ACTH), a moderate immunopositive reaction was detected in most hypertrophied basophils. Granules of immunopositive material were evenly distributed in their cytoplasm, with some of their concentration in the marginal zone of the plasmalemma.

With blood loss from 2200 to 3000 ml, there was a pronounced hyperproduction of ACTH in the basophils of the adenohypophysis, since immunopositive granules were more pronounced in the peripheral sections of the cytoplasm, which indicated an increased production of ACTH.

Antibodies against FSH and LH did not reveal significant differences depending on the amount of blood loss, which indicates the absence of their hyperproduction in basophils.

It has been established that the development of necrotic changes in the adenohypophysis depends not only on the volume of blood loss, but also on its duration, since with a daily lethality, adenohypophysis necrosis was noted in 25% of cases, and with the onset of death 4 days after the onset of bleeding, in 75%. Comparison of morphometric indicators objectively testified to more significant structural changes in the adenohypophysis with bleeding exceeding 2000 ml.

Thus, a reliable causal dependence of pathomorphological changes in the adenohypophysis on the volume of blood loss characterizes the compensatory mechanism in conditions of acute adrenal insufficiency, which is characteristic of any shock, including posthemorrhagic one. The results obtained in the MS group make it possible to extrapolate the revealed changes and predict their high probability of development in patients who almost died from massive bleeding due to an interrupted tubal pregnancy.

Characteristic morphometric changes in the pituitary gland are the initial stages of Sheehan's syndrome, which fully develops with prolonged progression of hypopituitarism, which justifies the direction of rehabilitation measures for patients who almost died from massive bleeding associated with ectopic pregnancy.

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