

MORPHOLOGICAL ANALYSIS OF MISSED ABORTION

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Abstract

In order to reveal reasons of missed abortion we conducted initial morphological analysis of material from cavity of the uterus in 257 women with missed abortion at the age of from 20 to 37 years old. The purposeful morphological analysis of scraps from cavity of the uterus in missed abortion has allowed allocating five its basic morphological reasons, in particular inflammatory, endocrine, autoimmune, chromosomal and mixed factors that may cause missed abortion. Thus, we can believe that careful histological study of the endometrium and embryo eggs in missed abortion would allow understanding the original cause of destruction of embryo and mechanisms of its delay in cavity of the uterus.

Keywords: missed abortion, morphological analysis.

Introduction

According to the World Health Organization, annually 20 to 30 million abortions are developed in the world. The special place has missed abortion, i.e. destruction of embryo with its long delay in cavity of the uterus. Researches on problem of abortion reported that frequency of missed abortion is equal 16-18% [1, 2]. Such terrible complication of missed abortion as bleeding quite often results to female disability or lethality [1, 3].

The most often reasons of missed abortion are endocrine and immune disturbances in mother, metritis, and chromosomal anomalies [1]. At the same time, in 26-66% of cases it is not possible to find out a reason of missed abortion. There are few morphological studies of missed abortion in ascertaining pregnancy, inflammatory or regressive changes in placental villi of mucous membrane of the uterus [4, 5]. There is a basis to believe that careful histological study of the endometrium and embryo eggs in missed abortion would allow understanding the original cause of destruction of embryo and mechanisms of its delay in cavity of the uterus.

The purpose of research was to reveal reasons of missed abortion on the basis of results of the initial morphological analysis of material from cavity of the uterus.

Material and methods

We studied 257 women with missed abortion at the age of from 20 to 37 years old. 34 of them had the first pregnancy, 14 - the second, and 2 females had the third pregnancy. Diagnosis of missed abortion was established by ultrasonic study at the 6-8th weeks of pregnancy on absence of fetal heartbeats or embryo absence. Then we conducted vacuum-aspiration. All materials obtained were fixed in 10% solution of neutral formalin within a day. Morphological analysis confirmed presence of parts of embryo and ascertained embryo absence. For histological study, we selected chorionic villi, endometrial tissue, and fragments of surrounding tissues and structures.

Results of research and their discussion

Depending on character of morphological changes which have been found out in missed abortion, we allocated 4 groups of patients; in the 5th group the embryo was absent.

The 1th group consisted of 88 (34.2%) patients whose scrapes from uterine cavity of a uterus found parietal and basal deciduitis as diffuse infiltration with prevalence of lymphocytes and polymorphic-nuclear leukocytes, as well as microabscesses with center of cellular disintegration. For inflammatory defeat of parietal deciduitis is characteristic concentration of lymphocytes around uterine glands with severe dystrophy of epithelial cells or with their nodular proliferation. In structure of placental platform were microabscesses, centers of hemorrhages in which periphery we often found necrosis surrounding layers of decidual cells.

Smaller part of scrapes had villi in early placenta in which capillary vessels were determined. By degree of their representation and filling, it is possible to determine time of stop of formation of the placenta. If in chorionic villi small empty capillaries are visible, so growth of the placenta was stopped at the 6th week of pregnancy; at presence of gleams of nuclear erythrocytes – at the 7-9th weeks, typical erythrocytes – at the 10-12th weeks of pregnancy, respectively.

The important histologic sign of inflammatory nature of missed abortion was significant increase in number of placental macrophages in vascular chorionic villi that confirms their participation in inflammatory reaction of surrounding tissues.

Thus, inflammatory reason of missed abortion is diagnosed when morphological picture of parietal and basal deciduitis. Apparently, destruction of embryo is caused by massive inflammatory infiltration, micronecrosis in a zone of direct contact of chorionic bag with parent tissues.

The 2nd group consisted of 56 (21.8%) patients in whose endometrial morphological picture endocrine disturbances were prevailed, in particular insufficient development of parietal and basal deciduitis. In this case, among uterine glands with thin epithelium and poor secret absent-minded fields we determined friable located decidual cells with their incomplete differentiation. Small decidual cells without characteristic nimbus were prevailed. Especially, it was found inherent basal deciduitis with only individual high differentiated decidual cells of epithelium type.

The similar morphological changes characterize insufficiency of progesterone as this hormone is responsible for endometrium [4].

Clinical and laboratory studies of 11 patients with the similar morphological results have found the following hormonal disturbances: ovary dysfunction of type of oligomenorrhea (9), barreness (3), hirsutism (7), galactorrhea (3), and adiposity in combination with deencefal infringements (5).

In the 3rd group (n=31; 12.1%) were prevailed autoimmune disorders. In scrape materials of these women were dominated severe rheological disorders of type of retroplacental hematomas resulting to detachment of early placenta in a zone of a. basalis. The important histological characteristic of stratifying hemorrhages was various prescription of their formation: in separate sites they represented the organized blood clots with adjournment of strings of fibrin and penetration fibroblasts in peripheral zones (prescription of 8-12 days), in other sites was prevailed erythrocytes hemolysis of mothers or their sticky-reaction, i.e. attributes of prolonged local syndrome of blood fibrillation. As a rule, in uteri-placental arteries thrombosis of various limitation periods came to easy at their

quite adequate gestational to reorganization. Similar changes of local hemostasis were visible and in a. parietalis, but in a smaller volume.

In scrapes from uterine cavity in 69 (26.8%) patients of the 4th group was appeared complex to allocate 1 of 4 morphological reasons for missed abortion, as the combination of 2 (inflammatory and endocrine disturbances) or 3 (inflammatory, endocrine, and autoimmune disturbances) factors was marked. By degree of expressiveness, inflammatory changes more often were on the first place, whereas endocrine factors were on the second one.

13 (5.1 %) women had ascertained absence of embryo in ultrasonic and in material scrapes. Histological study confirmed gross infringements of development of chorionic villi with absence of signs of angiogenesis and fragments of chorionic bag. Epithelial layer of chorionic villi was sharply thin, practically fleecy cytotrophoblasts were absent, and in villi were rare mesenchimal cells with signs of hypostasis. Genetic research of married couples has revealed in one of patients inversion of chromosome 9: 46, XX, in another one (47, XXX).

Thus, the purposeful morphological analysis of scraps from uterine cavity in missed abortion has allowed to allocate five its basic morphological reasons, in particular inflammatory, endocrine, autoimmune, chromosomal and mixed factors that may result missed abortion.

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