
REVEALING COMBINED PATHOLOGY OF GENITALS, MAMMARY AND THYROID GLANDS WITH SONOGRAPHIC SCREENING

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Objective. To study revelation rate of a combined pathology of genitals, thyroid and mammary glands among the conditionally healthy women with sonographic screening.

Methods. Sonographic screening of 1674 women aged 17 - 81 was performed. The mean age was 39 years. The examination was made with MEDISON SA-1500/SA-4800 using 3,5 and 7,5 MHz transducers and 6,5 MHz transvaginal transducer.

Results. The pathology was revealed in 968 women that have made 57,8% from number surveyed. Among them, the combined pathology was found out much more often than isolated. So, from 776 revealed cases of gynecologic pathology, isolated pathology was only in 263 (33,9%), from 353 pathologic findings in mammary glands – in 91 (25,4%), from 397 cases of thyroid gland pathology – in 141 (37,3%). In total, from 1526 pathological conditions only 495 had no combinations with other pathologies, that has made 32,4%. Another 1031 were diagnosed in 473 patients. Most frequent components of combinations were endometriosis (88,4%), endometrial hyperplasia (89,7%), sclerocystic degeneration of ovaries (85,7%), lactocele (90,3%), mammary fibrocystic disease (73,2%), and thyroiditis (80,0%).

Conclusions. Performing a sonographic screening it is necessary to carry out a complex examination, and when one disease is revealed it is advisable to seek an associated pathology for the adequate determination of the further treatment tactics.

MECHANISM OF FERTILIZATION AFTER INTRACYTOPLASMIC SPERM INJECTION

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Recently a substantial progress in understanding of the mechanism of fertilization during ICSI has been made. The following sequence of events leading to the zygote formation has been identified.

Immobilization of the spermatozoon with a needle induces damage of the sperm plasma membrane so that the sperm nucleus decondensing factor (SNDP) of the oocyte can reach and decondense the sperm nucleus. However, polyvinylpyrrolidone (PVP), which is present in the drop with the sperm, stabilizes the sperm plasma membrane or changes the chemical properties of other molecules in its vicinity thereby preventing sperm and egg interaction. As the PVP becomes diluted following sperm placement into ooplasm, SNDP access the sperm chromatin inducing initial, activation independent, sperm nucleus swelling that ruptures the sperm plasma membrane. This enables a sperm-associated oocyte activating factor (SAOAF), which remains non-identified, to leave spermatozoon and to induce oocyte activation through mobilization of intracellular calcium for oscillations. SAOAF release take place within 30 minutes after injection. Between 2 and 3 hrs after injection resumption of meiosis can be observed at cytogenetic level as an early anaphase of the second meiotic division. Two to three hours later the late anaphase stage is reached, and sperm and oocyte chromosome become indistinguishable from each other. A second polar body is being extruded at this time. Shortly after the male and female chromatin undergo further decondensation to develop into a male and female pronucleus.

Investigation of mechanism of fertilization after ICSI has also contributed to understanding the mechanism of fertilization in general.