IS-49  Human amnion as a Temporary biological barrier after hysteroscopic lysis of intrauterine adhesions: A Comparative study

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Aim: To evaluate the safety and efficacy of amnion graft, both fresh and dried, as a temporary biological barrier after hysteroscopic lysis of intrauterine adhesions. Design: Prospective randomized comparative study. Setting: Department of Obstetrics and Gynecology, Ain Shams University, Endoscopy Unit. Patient (s): 75 Patients with symptomatic intrauterine adhesions of various grades. Intervention (s): Patients were randomly classified into three groups, each comprising 25 subjects. Hysteroscopic lysis of intrauterine adhesions was followed by insertion of intrauterine balloon (IUB) alone (Group A) or along with fresh amnion graft (Group B) or with dried amnion graft (Group C). The balloon was removed 2 weeks later and follow-up hysteroscopy was performed 2-4 months postoperatively. Main Outcome Measure (s): Improvement in the adhesions grade, menstrual flow, uterine length, complications and reproductive outcome. Results: The overall dropout rate was 6.7% (4 subjects in group A and 1 subject in group B). The data showed statistically significant improvement within the three groups regarding adhesions grade, menstrual flow, and uterine length, yet with statistically insignificant difference between them. 42 patients were treated in one endoscopic session (60%), 26 in two sessions (37.1%) and two patients in three sessions (2.9%). There were no complications apart from two uterine perforations (2.9%) and early balloon expulsion in five patients (7.1%). Out of the 23 patients (32.8%) who got pregnant, seven (30.3%) aborted and 16 (69.5%) were either ongoing or delivered at term without complications, with no differences between groups. Conclusion: The use of amnion graft, both fresh and dried, is a safe adjunctive method in treatment of intrauterine adhesions. Key words: Uterus; Synecia; Operative hysteroscopy; amnion graft, intrauterine balloon, Reproductive outcome.

IS-50  Effect of progesterone and estrogen receptors suppression on STAT3 activity in uterus during implantation period

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[Objective] In our previous studies, only approximately 50% of suppression of signal transducer and activator of transcription-3 (STAT-3) activity in the uterus at implantation period showed implantation failure caused by suppression of decidualization with normal progesterone level. In this study, we investigate the relationship between progesterone signal and STAT3 activation. [Methods] Mice were treated with mifepristone (M), progesterone receptor antagonist, fulvestrant (F), a selective estrogen receptor down-regulator, or vehicle (V) as a control group on day 4.5 post coitus. At 6, 12 and 24 hours after treatment, the uterus were removed and frozen in liquid nitrogen. The amount of activated STAT3 was measured using nuclear proteins from uterine tissues. [Results] STAT3 activity in the M treatment group was significantly lower than control group at all time points. Moreover, STAT3 activity 24 hrs after treatment was significantly lower than on 6 and 12 hrs after treatment. The STAT3 activity 6 and 12 hrs in F treatment groups were significantly lower than the control group, but there were no significant differences on 24 hrs after treatment. [Conclusion] The suppression of progesterone receptor reduced STAT3 activity in uterus during implantation period. Our results suggest that progesterone signal could be upstream of STAT3 activation in uterus during implantation period.

IS-51  Cell surface marker-based isolation and functional analysis of human myometrial stem cells

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[Objective] Human myometrium has been reported to contain a side population of cells that exhibit stem cell properties. The aim of this study was to develop a new isolation method for myometrial stem cells using antibodies against surface antigens and to explore the role of the stem cells in pregnancy. [Methods] Myometrial tissue samples were obtained from patients who had undergone hysterectomy. The use of specimens was approved by the Institutional Ethics Committee. Dissociated myometrial cells were sorted into CD34+/CD49f+ cells (Double Positive Cells; DPCs) and non-DPCs. We performed a differentiation assay on these cells. Additionally, they were used in an engraftment analysis in which they were transplanted into the uteri of immunodeficient mice. [Results] The DPCs were able to differentiate not only into osteocytes, adipocytes and chondrocytes in vitro but also into myometrium in immunodeficient mice. There was a greater degree of proliferation of the DPCs transplanted into the pregnant mouse uterus, as compared to the engraftment seen in a non-pregnant uterus. [Conclusion] This study demonstrates the identification of a population of myometrial stem-like cells, based on cell surface markers. Myometrial differentiation of these cells was triggered by the environment of the pregnant uterus suggesting that stem cells may be involved in uterine remodeling at the time of pregnancy.