

# Presence of endometriosis in patients with premature ovarian failure undergoing ovarian tissue transplantation

Laura Lotz, Anna Dietl, Inge Hoffmann, Andreas Müller, Matthias W. Beckmann, Ralf Dittrich.

*Department of Obstetrics and Gynaecology, Erlangen University Hospital, Friedrich-Alexander University of Erlangen–Nuremberg, Erlangen, Germany, Department of Obstetrics and Gynaecology, Erlangen University Hospital, Friedrich-Alexander University of Erlangen–Nuremberg, Erlangen, Germany, Department of Obstetrics and Gynaecology, Erlangen University Hospital, Friedrich-Alexander University of Erlangen–Nuremberg, Erlangen, Germany, Department of Gynecology and Obstetrics, Karlsruhe Municipal Hospital, Moltkestrasse 90, 76133, Karlsruhe, Germany., Department of Obstetrics and Gynaecology, Erlangen University Hospital, Friedrich-Alexander University of Erlangen–Nuremberg, Erlangen, Germany, Department of Obstetrics and Gynecology, Erlangen University Hospital, Friedrich Alexander University of Erlangen–Nuremberg, Germany.*

## Abstract Body

**Introduction:** Ovarian tissue cryopreservation and transplantation is an efficient option to restore fertility in women at risk of premature ovarian failure (POI). The association between infertility and endometriosis is well known. Although endometriosis usually ends with the onset of natural or iatrogenic menopause, it can also occur rarely. This study aims to evaluate women with POI diagnosed with endometriosis during laparoscopy for ovarian tissue transplantation and to address the question of how endometriotic lesions can be explained after cytotoxic treatment and POI and whether endometriosis affects pregnancy rates.

**Material/Methods:** In this retrospective study seventeen women with POI, who were diagnosed with endometriosis during ovarian tissue transplantation, were included. The stage of endometriosis was scored according to the revised classification of the American Fertility Society (rASRM). The endometriosis foci were completely removed by dissection during the operation and the ovarian tissue was transplanted into a peritoneal pocket of the pelvic peritoneum. Pre-existing conditions, use of hormonal preparations and pain assessment were recorded and evaluated. The patients were followed up for pregnancy and live birth rate.

**Results:** The mean age of the patients at the time of ovarian tissue harvest was  $29.5 \pm 6.3$  years (range 14-39) and  $34.6 \pm 4.3$  years (range 28-40) at transplantation. Prior to transplantation, four patients had taken hormone replacement therapy, four oral contraceptives and two tamoxifen. Twelve women had stage I endometriosis and five had stage II endometriosis. Four patients reported dysmenorrhea. None complained of general pelvic pain or dyspareunia. The pregnancy rate was 41.2% with a live birth rate of 35.3%. The pregnancies occurred in three cases after spontaneous conception, in four women after a natural cycle IVF. There was no significant difference regarding the age at time of cryopreservation and the AMH-values of women who conceived and who did not ( $p=0.28$  and  $0.22$ ).

**Conclusion:** This study highlights the under-researched association between endometriosis in women entering premature or early menopause either after gonadotoxic treatment or due to primary ovarian insufficiency. As more and more patients seek to have their cryopreserved ovarian tissue transplanted back to fulfil their desire to have children, specialists will inevitably encounter women with this condition.