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Research article

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Womb transplantation

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ABSTRACT

Womb transplant is simply known as transplantation of womb to women who cannot carry out a pregnancy on their own due to disease condition or absence of the womb, after the womb transplantation gestation period is normal as healthy women. The child born is genetically similar to women who underwent womb transplantation. For embryo production in womb transplant drugs are given to the recipient for stimulation of eggs. Firstly, for production of embryo recipient own egg and partner's sperm are frozen. Womb with two main arteries and veins are removed successfully from donor and implanted to recipient in a surgery. Women are given immune suppressants before 12 months of womb transplantation and then go through surgery. Womb can be donated by brain dead or alive donor. After successful pregnancy womb can be removed or can be given a second chance of pregnancy as per wish, mostly it should be removed as prolong use of immune suppressants can lead to diseases like cancer

Keywords: Vaginoplasty, Womb transplantation, Vulvo-Vaginal structures, Reconstructive Plastic Surgery.

INTRODUCTION

The womb to be transplanted can be from brain dead organ donor or a live donor. One year before the implantation of the embryo in the womb, health of the receiver and the womb transplanted to be closely monitored. The recipients own egg and her partner's sperm are required to create embryos, if a pregnancy occurs, the fetus will be delivered after eight months' gestation by cesarean section. To avoid organ rejection, immuno suppressant's are given. The womb transplanted is removed six months after the birth to neglect over use of

immuno suppressant's. If possible couples can be given the option of trying second pregnancy.

Womb transplant is an opportunity for those women who cannot carry out a pregnancy on their own, child produced will be genetically related to women who underwent womb transplantation. A womb transplant procedure generally, improves the length and the quality of life of the patient.

However, for creation of embryos in IVF procedure eggs are needed, mostly in gestational surrogacy and the womb transplant option recipient

have to take drugs that stimulate her ovaries for egg production.^[1]

PROCEDURE

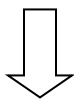
Receivers own egg and sperms from her partner are frozen to create an embryo. The women, after 12 months on immunosuppressant's and close monitoring undergo a 6 hour womb transplant operation. Donated womb can be either from a

brain dead woman, but whose heart has been kept beating or can be from a live donor. Implantation of an embryo for achieving a successful pregnancy and baby is delivered by cesarean section. Six months after giving birth the womb can be removed or chance for second pregnancy can be given. Removal of womb after six months is to avoid prolonged use of immunosuppressant's drugs as they can cause severe side effects like cancer.^[2,3,4]

Patient's eggs are removed and fertilized to make embryos. These are frozen until needed



A womb with two major arteries and veins is removed from a donor in three-hour operation



Donated womb is implanted into patient in a six- hour operation. She's put on powerful immunosuppressant drug to avoid rejection of the womb.

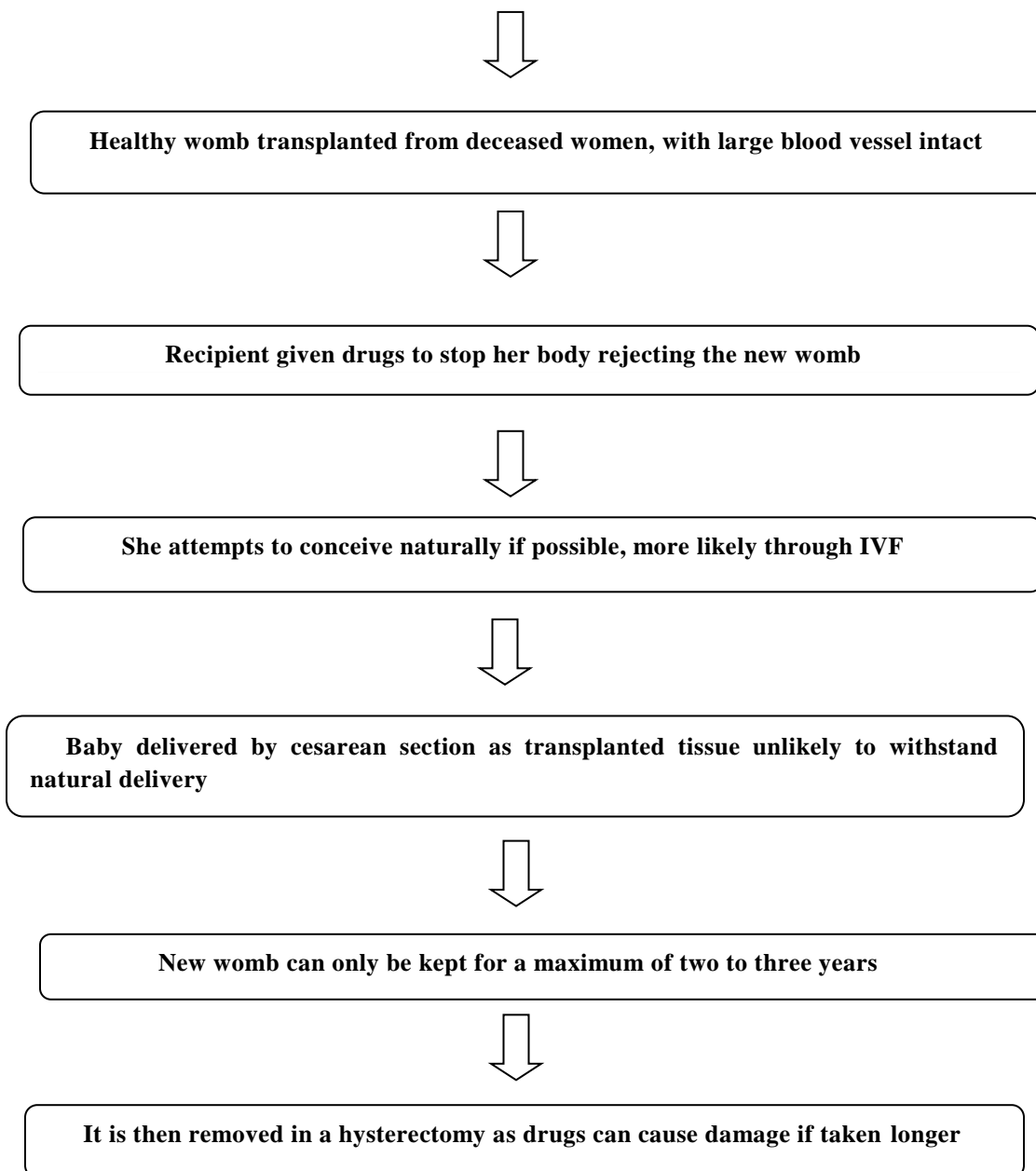


A year later when doctors are confident that a transplant is a success, one of her embryo is thawed and placed in her new womb



A baby is delivered by C-section after being carried through pregnancy

PROCEDURE WORKED



CASE -1

SUCCESS WOMB TRANSPLANTS STORY OF SWEDEN MOTHER

The woman of age 36, who was born without a womb, received a donated womb from a friend aged 60 who got menopause just before a few months. In this case the womb transplant is done as the receiver was born without a uterus (womb) due to which she is unable to experience embryonic implantation. Womb transplantation can also be carried out in women with a diseased womb. After a

successful attempt, the baby was delivered prematurely, but healthy, weighed about 3.9 pounds.

The donated womb is implanted into the to-be mother by performing the operation. In vitro fertilization is carried out which is followed by egg harvesting and fertilization, then an early-stage embryo is inserted into her womb.

Immunosuppressants are advised in order to prevent organ rejection that has been linked to cause cancer. So, womb transplants can still be dangerous to the recipient's health. After the birth of a child, it's likely that the mother will have to get her womb removed to prevent organ rejection.

by her own body or long-term damage from the drugs. Many other women with womb transplants can give birth to children. By improvising it to the safer and better procedure.^[5]

CASE -2

A woman was born with no vagina and no uterus and never menstruated in her life. Had gone through Vaginoplasty, and a reconstructive plastic surgery for the vaginal canal along with vulvo-vaginal structures and the surgery went so well. She was able to move freely on her own the next day. After this, she was beginning to feel more like a woman whilst she prepared for her transplant. Her ovaries were functioning and have her own eggs, but lacked the vital organs which are needed to produce a child. Eggs are removed and fertilized before transplantation to make an embryo, then froze them until they were needed. Now she has successfully received her mother's womb, after the complete recovery, a frozen embryo will be implanted, and if all goes well, she will become pregnant. If the baby survives full term, it would then be delivered by Caesarean section, and the uterus has to be removed after one or two children.

Womb transplantation had never been successful in China yet the doctors decided to go for it. Surrogacy was illegal in China so it was never an option for her. This particular operation lasts for about 14 hours, and is challenging for surgeons, others globally usually last around six. The operation is performed by using advanced robotic technology. It was the world's first robot-assisted surgery cut of its kind. The recipient should take Immunosuppressant drugs throughout her pregnancy, to prevent the chances of the body rejecting donated womb.

The Donor can only deliver a platform of sustaining life, the husband will provide his own genetic material. The operation was successfully performed. She and her mother are both said to be recovering well, and the transplanted has survived.^[6]

CASE -3

Doctors in Saudi Arabia reported that they performed the world's first womb (uterus)

transplant, due to some problem, it turned out to be a failure yet was a lesson for improvisation for further womb transplants. Womb donor was a 46-year-old woman and receiver was a 26-year-old. Receiver underwent hysterectomy because of a hemorrhage (bleeding) after childbirth.

Transplanted womb was healthy for three months, then began to deteriorate reason was blood clots ceased the circulation, hence it was removed. Experts took it not as a failure because fact that at least three months it lasted was encouraging.

The recipient underwent hysterectomy six years earlier, but still wanted another baby. The donor, needed surgery for ovarian cysts. The she agreed to give her uterus to the recipient. Before and after the surgery the recipient took anti-rejection drugs to help the uterus to develop a normal lining. The recipient was doing well until the Day 99, when she was examined, tests showed that blood flow to the uterus had stopped and was with pelvic discomfort. A hysterectomy was done.

The stoppage of blood flow to the uterus may have occurred if the uterus was not anchored securely enough, which may lead to kinking, torsion or probable tension of blood vessels.^[7]

CONCLUSION

Womb transplant is an opportunity for those women who cannot carry out a pregnancy on their own or women with absence of embryo or disease conditions. The womb is transplanted can be from a brain dead organ donor or a live donor. The child born is genetically similar to the mother who underwent womb transplantation. Implantation of an embryo for achieving a successful pregnancy and baby is delivered by cesarean section. The embryo is removed after the delivery or given a chance for a second baby. The recipient should take Immunosuppressant drugs throughout her pregnancy, to prevent the chances of the body rejecting donated womb but prolonged usage is not recommended. Womb transplantation is a hope for those women who cannot deliver a baby. It was hailed initially as a medical breakthrough, but the success was short lived. Till now there are hardly few articles which aim at bringing this surgery into limelight. The main aim of this article is to aware people about womb transplantation.

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