ADNEXECTOMY
Salpingo-Oophorectomy

The removal of the fallopian tube and ovary on one side, or ovaries and tubes on both sides.

About Adnexectomy

Term adnexectomy is a term which is often used in gynaecology for salpingo-oophorectomy (removal of fallopian tubes and ovaries, Pic. 1).

In anatomical view adnexa (Pic. 2) are the structures most closely related structurally and functionally to the uterus. They can be defined in slightly different ways:

- Some sources define the adnexa as the fallopian tubes and ovaries.
- Others include the supporting tissues.
- Another source defines the appendages as the regions of the true pelvis posterior to the broad ligaments (connects the sides of the uterus to the walls and floor of the pelvis).
- One dictionary includes the fallopian tubes, ovaries, and ligaments (without specifying precisely which ligaments are included).

In practice, this term adnexectomy is not commonly used, more often it is called oophorectomy (removal of ovary) or salpingectomy (removal of fallopian tube) or combination of both called salpingo-oophorectomy. The removal can be unilateral (on one side) or bilateral (on both sides).

Oophorectomy

Removal of the ovaries in women is the biological equivalent of castration in males; the term castration is only occasionally used in the medical literature to refer to oophorectomy in humans. In humans, oophorectomy is most often performed because of diseases such as ovarian cysts or cancer; as prophylaxis (the preventing of disease) to reduce the chances of developing ovarian cancer or breast cancer; or in conjunction with hysterectomy (removal of the uterus).

Oophorectomy for benign causes is most often performed by abdominal laparoscopy (a surgical procedure, which is used to examine the organs inside the body through small incisions). Abdominal laparotomy (a surgical procedure involving a large incision through the abdominal wall to gain access into the abdominal cavity) or robotic surgery is used in complicated cases or when a malignancy is suspected.

Salpingectomy

Salpingectomy refers to the surgical removal of a fallopian tube. This procedure is now sometimes preferred over its ovarian tube-sparing counterparts due to the risk of ectopic pregnancies. This procedure is irreversible.

Salpingectomy has traditionally been done via a laparotomy; more recently however, laparoscopic salpingectomies have become more common as part of minimally invasive surgery. The tube is severed at the point where it enters the uterus.

Salpingo-oophorectomy
Salpingectomy is commonly done as part of a procedure called a salpingo-oophorectomy, where one or both ovaries, as well as one or both fallopian tubes, are removed in one operation. If a bilateral salpingo-oophorectomy (BSO) is combined with an abdominal hysterectomy (a surgical procedure that removes your uterus through an incision in your lower abdomen), the procedure is commonly called a total abdominal hysterectomy with a bilateral salpingo-oophorectomy (TAH-BSO).

**Success or failure factors**

Bilateral adnexectomy is a surgical procedure that is frequently associated with total hysterectomy performed for benign uterine conditions. Given the relatively wide range of indications for salpingo-oophorectomy which in itself is not devoid of potential risks the patients’ and physicians’ decision-making should take into account several parameters (most helpful to individualize treatment) such as published ratio of removal versus conservation of uterine adnexae, patients’ age, pre/postmenopausal status at the time of surgery, relevant family and personal history including current use of hormonal replacement therapy.

When considering options for treatment of benign conditions of the uterus both physicians and patients should ponder carefully the risk/benefit ratio of salpingo-oophorectomy according to each patient clinical profile.

The majority of cases with ovarian cancer which is the main cause of oophorectomy are sporadic, not hereditary. Women with no documented germ line mutation or family history suspicious for genetic risk for ovarian cancer are considered to be at average risk. Women at increased genetic risk for ovarian cancer, especially those with BRCA1 and BRCA2 (BRCA gene mutations are responsible for about 5 to 10 percent of breast cancers and about 15 percent of ovarian cancers) germ line mutations are at high risk of ovarian cancer, and it is preferred to undergo risk-reducing bilateral salpingo-oophorectomy.

**Complications**

The risks associated with this surgery include infection as well as internal organ damage. Laparotomic adnexal surgeries are associated with a high rate of adhesive small bowel obstructions (24%). An infrequent complication is injuring of the ureter at the level of the suspensory ligament of the ovary.

The most harmful side effect of oophorectomy, however, is the loss of hormones produced by the ovaries. Women who have had bilateral oophorectomy surgeries lose most of their ability to produce the hormones estrogen and progesterone, and lose about half of their ability to produce testosterone, and subsequently enter what is known as “surgical menopause” (as opposed to normal menopause, which occurs naturally in women as part of the aging process).

In natural menopause the ovaries generally continue to produce low levels of hormones, especially androgens, long after menopause, which may explain why surgical menopause is generally accompanied by a more sudden and severe onset of symptoms than natural menopause, symptoms that may continue until the natural age of menopause. These symptoms are commonly addressed through hormone therapy, utilizing various forms of estrogen, testosterone, progesterone or a combination. A potential risk for oophorectomy performed after menopause is not fully elucidated.

When the ovaries are removed, a woman is at a seven times greater risk of cardiovascular disease, but the mechanisms are not precisely known.

Oophorectomy is also associated with an increased risk of osteoporosis and bone fractures. Lower levels of testosterone in women are predictive of height loss, which may occur as a result of reduced bone density.

Salpingectomy on both sides leads to sterility, because released egg cannot be transport and fertilized in fallopian tubes.

**Prognosis**
With bilateral adnexectomy, the natural conception is impossible, the only option is to use an egg donor. In case of unilateral adnexectomy, there is still remaining ovary capable of producing eggs, so the conception in natural way is possible. In most cases the adnexectomy is accompanied by hysterectomy, which leads to inability to carry a child.

Find more about related issues

Pelvic Inflammatory Disease
Infection of the upper part of the female reproductive system and a common complication of some sexually transmitted diseases. Learn more at: www.fertilitypedia.org/therapy/diag/pelvic-inflammatory-disease-do-rf

Gallery

Pic
Schematic drawing of female reproductive organs, frontal view.

Fallopian tubes
Ovaries
Uterus
Cervix
Vagina

Pic
Uterus and right broad ligament, seen from behind. The broad ligament has been spread out and the ovary drawn downward.

Sources

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“Adnexectomy Versus Ovarian Conservation During Total Hysterectomy for Benign Conditions. A Difficult Dilemma [https://www.omicsonline.org/peer-reviewed/adnexectomy-versus-ovarian-conservation-during-total-hysterectomy-for-benign-conditions-a-difficult-dilemma-30800.html]” — by Pǎun et al. licensed under CC BY 4.0


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