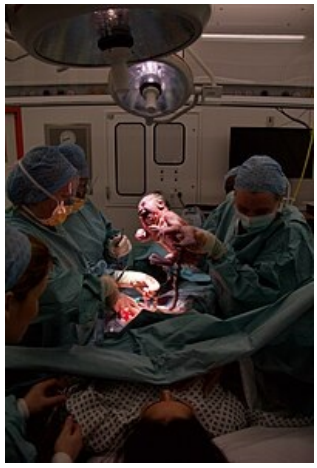
Caesarean section



Cesarean section (sectio *caesarea*/sectio cesara/SC) is one of the historically oldest obstetric procedures, whose roots go back to antiquity. The name is probably derived from Lat. *caedere* - to cut, not from "emperor". This opinion was probably connected with the extraordinary nature of this performance. At present, on the contrary, it belongs to the **most common operations** in obstetrics, and its indications are still increasing. In the Czech Republic, around 20% of pregnancies are terminated by caesarean section.

History

Caesarean section belongs to the **oldest operations** that mankind remembers in its historical sources. Already in the 7th century BC, the ruler of ancient Rome, Numa Pompillius, issued a decree that a dead pregnant woman must not be buried without removing the fetus from her body. The operation was also performed on living women, already in ancient times. The first documented case of a caesarean section performed on a living woman dates back to 1610. The operator was the German surgeon **J. Trautmann** and the operated on was allegedly his wife, who died apparently as a result of an embolism on the 25th day after the operation. Mortality was close to 100%, most commonly due to inflammation of the peritonitis. Mortality among women later fell significantly thanks to three major medical discoveries: the principles of **antiseptic work**, the discovery of **blood types**, which later allowed safer conditions for the administration of blood transfusions, and the discovery of **penicillin** in the 1920s.

- High maternal mortality × introduction of antisepsis (Semmelweis, Lister);
- uterine wall suture (Polin 1852);
- wall sewing in two layers (Sängren 1882);
- cut on the lower uterine segment (Frank 1906).

Conditions, indications and technique often changed.

Modern conditions - strict asepsis, improvement of surgical technique, new suture materials, pharmacological advances, improvement of anaesthesia, the possibility of transfusion, advances in other areas of medicine (hematology, biochemistry,...).

Terms

Today, there is only one essential condition - **the large part should not enter and be fixed deep in the pelvis'** (the upper edge of the back pubic clasp should be reachable)[1]. Previously, there were more conditions, today the operation is also performed in the case of infectious manifestations of the mother, vital indications and inconclusive fetal viability or dead fetus, in very exceptional cases the incision can be performed even when the head has entered due to its elevation with the help of another obstetrician .

Indication

According to the nature of the indications, caesarean section can be divided into:

- **primary** (planned) – the indication is known in advance, and already during pregnancy it is decided to carry it out;
- **secondary** (unplanned) – acute indication, mother and/or fetus at risk.

Some groups of indications

1. Fetopelvic and cephalopelvic disparity – it is important to evaluate all pelvic planes, the size of the fetal head and any malformations and decide on the safety of vaginal delivery;
2. obstructions in the way – tumors, myomas in the way, tumors of the rectum, ren migrans, etc.;
3. pelveolysis, symphyseolysis;
4. conditions after operations uterus;
5. placenta praevia;
6. premature separation of the bed;
7. disorders of expulsion forces – primary and secondary hypokinetic, hyperkinetic and dyskinetic disorders;
8. birth fever;
9. irregular placement of the fetus;
10. position at the pelvic end;
11. urging and prolapse of the umbilical cord;
12. multiple pregnancy;
13. repeat cesarean section;
14. herpes genitalis;
15. dying woman/dead woman etc.

Operational Methods

- **Conservative methods**:

1. supracervical transperitoneal caesarean section - most used today;
2. cervicocorporeal caesarean section - especially when the lower uterine segment is completely undeveloped;
3. corporeal (classical) caesarean section – originally the only procedure, with the disadvantage of contraindications to further pregnancy due to the risk of rupture;
4. extraperitoneánica caesarean section - in case of intraovular infection.

- **Radical Methods**:

1. caesarean section with subsequent supravaginal amputation of the uterus - rejected due to the risk of bleeding from the remaining cervix;
2. caesarean section followed by hysterectomy - myomatous uterine bleeding, non-reparable rupture, DIC, placenta accreta;
3. extirpation of the pregnant uterus - no longer performed today.

Preoperative preparation

1. Basic laboratory examination of blood and urine;
2. ECG;
3. compensation of diabetes, hypertension, treatment of infection, preeclampsia;
4. prevention of thrombosis and embolism;
5. enema;
6. anesthesiological preparation and choice of anesthesia (combined general or regional seduction).

In acute surgery, there is no time for preparation, so the risk of complications increases.

Execution

The most frequently chosen method is the supracervical transperitoneal caesarean section, to which two approaches can be used:

- lower middle laparotomy - incision in the sagittal plane between the navel and the symphysis, used today only exceptionally (e.g. the original scar after previous operations);
- transverse suprapubic laparotomy or **Pfannenstiel incision** - semi-arched incision approx. 2 cm above the symphysis directed by the concavity to the navel.

We cut the skin, subcutaneous tissue and fascia with a *transverse* cut. *Longitudinally* we cross the mm. recti and open the peritoneum. We slide down the bladder and penetrate the myometrium with a short transverse incision. With our fingers, we widen the incision towards the uterine edges, but we must not break them! We tear through the sac of membranes and gently remove the urgent part of the fetus, then slowly the entire fetus. We tie and cut the umbilical cord and entrust the newborns to the care of neonatologists. Subsequently, we apply uterotonics, remove the placenta manually, revise the uterine cavity and the wound. We sew the myometrium "in two layers" and the lung of the vesicouterine. Then we revise the adnexa and suture the layers of the abdominal wall[1].

Complications

The incidence of complications after termination of pregnancy and delivery by caesarean section is up to six times higher than during vaginal delivery.

- Bleeding – arterial from the "aa. uterinae" bed, from venous plexuses, due to hemocoagulation disorders, etc.;
- embolism – air embolism, amniotic fluid embolism, thrombophlebitis embolism;
- organ damage – urinary bladder, small bowel loop, ureteral ligation;
- post-operative hematoma – subfascial hematoma, bleeding under the "plica vesicouterina";
- infection - from local manifestations to sepsis;
- anesthetic complications;
- hernia in cicatricae – more often after mid-lower laparotomy, after repeated laparotomies, healing per secundam.

Causes of the increasing rate of caesarean sections

The increasing number of **mothers over 30 years of age**, i.e. women with a higher risk of diseases not related to pregnancy and childbirth (most often diabetes and its complications and high blood pressure), with a higher risk of an abnormal pregnancy, or repeated failures of previous pregnancies, when the mother is worried about the fate of the future child and insists on surgical termination of the current pregnancy.

An increase in the number of women preferring a caesarean section when the fetus is in a breech position. The position of the fetus at the pelvic end occurs in about 3-4% of pregnant women around the due date (around 4,000 pregnant women per year). Of these, 80-90% of babies are delivered by caesarean section.

As part of the success of assisted reproduction methods for infertile couples, the number of multiple pregnancies is also increasing, which in many cases are indicated for termination by caesarean section.

Caesarean section on request - a phenomenon that is not much talked about and which is not a recognized term in the professional circles of obstetricians in the Czech Republic (unlike some EU countries). In general, it is known more from the tabloids in connection with the births of so-called VIP personalities, but it also applies to "ordinary" mothers. The reason is most often the fear of a natural birth and the possible consequences for the mother (birth pains and injuries) and her child, a bad experience with a previous natural birth or the timing of the birth on a specific day. In such a case, the obstetrician prefers to use the term "psychological or psychosocial indication for caesarean section".

Links

Related Articles

- Birth
- Risk pregnancy and newborn

External links

- Caesarean section — interactive algorithm + test https://www.akutne.cz/algorithm/cs/178--/
- Resuscitation of a pregnant woman — interactive algorithm + test https://www.akutne.cz/algorithm/cs/239--/
- Surgery during pregnancy — interactive algorithm + test https://www.akutne.cz/algorithm/cs/387--/
- Cesarean Delivery, Medscape (https://emedicine.medscape.com/article/263424-overview)

References

1. CZECH, Eugene – HÁJEK, Zdeněk – MARSHAL, Karel. *Obstetrics.* 2. edition. Prague : Grada, 2006. 544 pp. ISBN 80-247-1313-9.