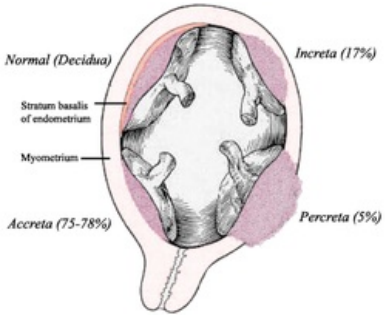
Amniotic fluid embolism

Amniotic fluid embolism is the penetration of amniotic fluid into the mother's circulation with subsequent blocking of the pulmonary canal and the development of pulmonary hypertension. This is a very serious birth complication that occurs rarely (1:80,000 births). The amniotic fluid enters the maternal circulation, where similar to embolism of other etiology, shock develops. This condition requires immediate obstetric and anesthetic care.

Causes

- Premature separation of the placenta;
- placenta accreta;
- insertio velamentosa umbilicalis with a short umbilical cord (tear in the membranes);
- transplacental caesarean section;
- surgery in third period of labor;
- dead fetus;
- preeclampsia;
- throat injury.



Different types of placental insertion – normal decidua, placenta accreta, placenta increta, placenta percreta

Clinical picture

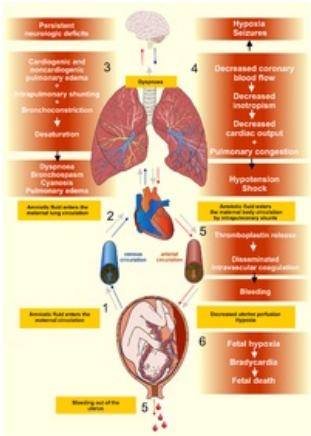
In the first stage, the symptoms of amniotic fluid embolism are the same as those of thromboembolism, namely cardiopulmonary failure in various ways. There is significant shortness of breath and hypotension with pO_2 falling below 80%. If the patient survives, symptoms of DIC develop within 15 minutes. Respiratory distress syndrome and acute renal failure develop, and the patient usually succumbs to this. Based on the developing clinical picture, we try to terminate the pregnancy as quickly as possible.

Diagnosis

Definitively, amniotic fluid embolism is usually diagnosed post-mortem, based on findings in the lung tissue, where lanugo, fetal skin epithelium, and meconium bodies are typically found.

Prophylaxis and treatment

For prophylaxis, similar general principles are recommended as for thromboembolism (specific procedures are not known). The treatment is also similar to thromboembolism, complete DIC therapy as soon as possible, hypotension therapy, prophylaxis of renal failure and convulsions. In the case of an incipient clinical picture of DIC, we quickly provide a blood reserve.



Amniotic fluid embolism description

Therapeutic Procedure

1. Presence of obstetrician, anesthetist.
2. Blood sampling for hemocoagulation examination and lung amylase examination (statim), order deleucotized erythrocyte mass.
3. Sometimes necessary analgosedation/muscle relaxation with artificial pulmonary ventilation with immediate inclusion of PEEP (end-expiratory pressure up to 10 cmH_2O (1.0 kPa)).
4. Insertion of central venous catheter, pulmonary catheter and invasive measurement of arterial pressure.
5. Management of hypotension: crystalloid solutions with titrated administration of dobutamine and noradrenaline.
6. Nootropics – piracetam in a dose of 12 g/24 h.
7. Neonatal intensive care for newborns.

Links

External links

- Anaphylaxis in obstetrics - embolism – interactive algorithm + test (https://www.akutne.cz/algorithm/cs/125--/)

References

- CZECH, Eugene. *Obstetrics.* 2. edition. Prague : Grada, 2006. ISBN 80-247-1303-9.
- BRECKWOLDT, Meinert. *Gynecology and Obstetrics.* 1. edition. Martin : Enlightenment, 1997. 648 pp. ISBN 80-88824-56-7.

- BENEŠ, George. *Questions from Obstetrics* [online]. ©2008. [cit. 2012-01-10]. <http://jirben2.chytrak.cz/materialy/porodnictvi_JB.doc>.
- Porodnice.cz. *Amniotic fluid embolism* [online]. [cit. 2012-01-09]. <http://lekari.porodnice.cz/embolie-plodovou-vodou>.