

Asphyxia of a Fetus and a Newborn

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ASPHYXIA is an acute pathological process. It appears as a result of deficiency of oxygen in blood and tissues and accumulation of carbonic acid. Therefore, the main thing in the struggle against asphyxia is the struggle against oxygen insufficiency in human organism.

As a result of different causes asphyxia can occur before, during, at once and after the birth of the child.

The most important signs of intra-uterine asphyxia in fetus are ; bradycardia in fetus ; (b) arrhythmia ; (c) soft sounds of heart ; (d) increasing of motions of fetus ; (e) coming off of meconium.

In case of signs of intra-uterine asphyxia application of A.P. Nikolayev's triad is very effective. This complex of therapeutic measures include :

Giving to the mother for breathing wet oxygen for 10 minutes with an interval of 5 minutes, till normal heart beating of the fetus ;

Intravenous injection of 10 per cent solution of "Koramine" ;

Intravenous injection of 50 ml. of 40 per cent solution of glucose with 300 mg. of ascorbic acid.

It is recommended to repeat this complex for the mother each hour even if the signs of intra-uterine asphyxia has disappeared in fetus. If these signs have not disappeared this complex is repeated every 10 minutes. If there is no therapeutic effect it is necessary to make a delivery with the help of the operation.

The child can be born in a blue and a white asphyxia. Some authors consider that blue and white asphyxia are consecutive stages of development, the others consider that they are qualitatively different conditions.

If the child is born in white

asphyxia his condition is always severe. The blue asphyxia is divided into three categories viz. mild, moderate and severe. If after the birth the child is diagnosed to have asphyxia it is necessary to take the following measures consecutively for restoration of respiratory and cardiovascular activity.

It is recommended to remove amniotic fluid and mucus from the baby's mouth with the help of a hand wound with cotton, from the nose with special rubber small balloon and from pharynx with the help of catheter or special apparatus for suction of mucus.

Artificial respiration with so-called method "mouth into mouth", with manual method or with the help of special apparatuses is recommended.

In case of a mild asphyxia artificial respiration carried out by apparatuses can be done with the help of special masks and in case of severe asphyxia with the help of metal intubators 2-3 mm in diameter and 12-15 cm. in length.

To introduce the intubator the epiglottis is drawn off forward by the forefinger of the left hand to close the entrance into esophagus. The intubator is introduced into epiglottis along the finger and pushed for 2-3 cm. After removal of mucus by suctorial apparatus the intubator is connected with a hose of respiratory apparatus. Respiration should be carried out by mixture of air with 40 per cent-50 per cent of oxygen. Pressure of mixture should be 30 mm of mercury column. Frequency of respiration should be 15-20 times per minute. In the case mechanical tension of lung tissues with the stimulation of vagus nerve and stimulation medulla oblongata occur. This promotes the res-

toration of respiratory centres.

If artificial respiration carried out by the apparatuses cannot be done "mouth into mouth" artificial respiration or hand method is recommended. At present the Silvestr's hand method is not almost used. The artificial respiration "mouth into mouth" is used and is effective. The child is laid on the table with the head hanging with the table. Taking into account that the volume of child's lungs is small artificial respiration is carried out by volume of air in the mouth of a revivificator. The child's mouth is covered with sterile gauze napkin, nose is stopped up with fingers or nose clamp. The revivificator puts his lips on the child's mouth and blows the air into the child's mouth through the napkin.

After insufflation of air it comes out passively from respiratory system of the child. The frequency of insufflation is carried out 15-20 times per minute. In this method side by side with oxygen the child receives carbonic acid which as well as oxygen is the stimulant of respiratory centre. If the heart stops its beatings an indirect massage of heart is done : put 4 fingers on the back of the child, the thumb on the chest and carry out rhythmic compressions of chest, 15-20 compressions in a minute. Besides the indirect massage of heart solution of adrialine (0.1% 0.2 mm) is introduced into the heart, in the third intercostal cm. from the edge of sternum to the left, the needle is directed perpendicularly to the chest. When blood appears in the syringe you can introduce Adrialine.

For normalization of disordered metabolism (acidosis, electrolytic balance), for normalization of cardiac activity and tissular respiration into the vena umbilicalis of the child one introduces :

4% solution of sodium bicarbonate in amount of 5-8 ml with 20 ml of 20% solution of glucose ;

3-5 ml of 10% solution of calcium gluconate ;

If the condition of the child is severe one introduces 40 ml of 10% solution of glucose with 0.2 ml of

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