

Examination of a newborn baby

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Examination at birth

Examination of a baby allows us to assess and monitor the baby's condition and promptly treat and give appropriate care as early as possible. It is an important part of overall care contributing to the baby's well being and survival.

Aim

- o To outline the process of examination of a baby soon after birth

Objectives

- o To screen for malformations
- o To observe smooth transition to extra uterine life
- o To assess the baby's overall condition

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Prerequisites

Minimum prerequisites include

- Mother & baby together
- Warm room, fresh clean sheet/clothes
- Thermometer
- Weighing scale
- Stethoscope
- Watch with seconds

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Principles of examination

The principles of examination include

■ **Assess**

This includes the three checkpoints like in IMNCI Ask, Check, Record and for this the examiner follows the guideline of Look, Listen, and Feel

■ **Classify**

■ **Treat or advise**

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Assess – Ask, check, record

The examination at birth includes asking the mother of the detailed antenatal history including visits to antenatal clinics, history of hypertension/diabetes mellitus, immunization (2 doses of TT), iron-folate supplementation, exposure to teratogens, infections, and decreased or increased liquor. Postnatal details on history shall include the presence of single umbilical artery which can be associated with renal malformations and the presence of excessive drooling which suggests presence of esophageal atresia.

The next step includes examination of the baby following the principles of look, listen and feel, and checking the baby's weight and temperature. After the above examination has been performed it is very important to record all the findings.

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Assess –Look

It is important to wash the hands thoroughly, wear gloves before attending delivery. After birth, look for major malformations in the baby. The aim of this step is a rapid screen for major malformations.

Examine the baby from the head to the toe .Most of malformations are located in the midline. Always remember to see the back of the child to look for the abnormality of the limbs and the spine. Examine the oral cavity for any cleft palate.

In addition, look for the patency of the esophagus especially in the baby with mother having history of polyhydramnios or baby having excessive drooling of saliva.

A newborn baby who turns blue while feeding and improves while crying is likely to have bilateral choanal atresia. Look for any other malformation which may have a systemic association. For example a baby with a single umbilical artery should be screened for vertebral, anorectal, renal, tracheoesophageal malformations (VATER). The presence of a single transverse palmer crease suggests the presence of Trisomy 21 or Down syndrome. Look for other dysmorphic features, like low set ears, depressed nasal bridge or other abnormalities. A newborn baby may have asymmetric cry due to absence of Depressor Angularis Oris Muscle (DAOM). Take a closer look at the ears, eyes and the umbilicus.

Record the breathing rate / pattern, color and heart rate which have already been looked at in the resuscitation steps.

** Note the respiratory rate should be counted for full 1minute. It is very important to differentiate between normal breathing in a baby and chest in-drawing.

Look at the general activity of the baby.

Slide EN-10

Assess- Listen

After looking at the previous steps in newborn examination the next step is to listen. The examiner listens for cry. For the next step the examiner requires a stethoscope and listens for grunt and heart sounds.

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Assess- Feel

The last step in this examination is to feel. The examiner feels for any abnormal swelling. This swelling may be a caput which is collection of fluid in the subcutaneous space or it could be a cephalhematoma. Note, the caput is over the dependent area while the cephalhematoma occurs to one side and is limited by the sutures since the swelling is subperiosteal. Palpate for the femoral pulses. Examine both the hips for dislocation. Feel for the capillary fill time by pressing over the sternum using ball of thumb. Normal capillary fill time is less than 3 seconds. The findings on inspection are confirmed in this step. Palpate the abdomen when the infant is not crying to feel for palpable liver, spleen of any other abdominal swelling. It is very important to palpate for the testis in the male baby.

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Weighing the baby

This shows us the procedure to examine the weight of the baby. The scale should be taken to the baby. Then the pan of the weighing scale is covered with a fresh cloth. Wait till the

display shows zero. After this, the baby is placed naked over the weighing scale. Wait till the baby stops moving. Now read and record the weight. The scale should ideally be calibrated daily and the pan should be cleaned in between each weighing.

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Temperature

After birth the baby should be kept in skin to skin contact with the mother immediately. Hands and feet should be checked for warmth with the back of the hand to see if the baby is in cold stress. If the baby feet and hand are cold but the baby is warm when seen over the chest, it means that the baby is in cold stress.

Each time use a fresh clean thermometer. The temperature of a baby is seen with the thermometer held vertically in the axilla for 3 minutes. A digital thermometer is held in the axilla till it plays a beep. Normal temperature of a newborn baby is 36.5°C-37.5°C. If the baby's temperature is between 36.0°C-36.5°C, the baby is in cold stress.

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Examination within 24 hours

Objective

- o To describe and carry out an examination of a baby within 24 hours after birth

Aim

- o To pick up malformations
- o To observe breast feeding and ensure the establishment of the same.

- o An assessment of baby's temperature
- o Classify the baby as normal and abnormal

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Assess –Ask, check, record

Examination at 24 hours includes asking the mother about breast feeding and general activity of the baby. The mother should be asked for any problems she is having .The next step includes examination of the baby following the principles of look, listen and feel, and checking the baby's weight and temperature. After the above examination has been performed document the findings.

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Assess –Look

Wash hands thoroughly before and after examining a newborn baby. Look at the color of the baby. Is the baby pink? The color of the baby should be assessed from the oral mucosa and the tongue. Peripheral bluish discoloration of the limbs may persist for the first few hours and may be normal. This is also known as acrocyanosis. Look at the skin of the baby. The skin of the baby may be dry and peeling in the post-term baby for the first few days. Watch for discharge from the eyes or the umbilicus or any redness around the umbilicus. Redness or discharge from the umbilicus should be noted with caution and appropriately treated. Inform the mother that the umbilicus stump will fall off in 5-7 days. Mother should be advised not touch, bandage or put anything on the stump.

Count the respiratory rate and watch for any retractions. Look for any abnormal swelling of the scalp. It is very

important at this point to look for abnormality of the limbs, fingers and the back as they may have been missed in the initial examination. Examine the weight and the temperature as per the method displayed in the previous slides.

An important part of the examination at 24 hours is to check for feeding adequacy. It is very important to note that the baby is well positioned and attached.

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Assess- Listen, feel

The principle of 'listen' remains the same. Listen for grunt, cry and auscultate the heart for any murmur. Feel for the femoral pulses and the capillary fill time. Feel for cold stress and the temperature with the back of the hand. Feel for the extent of jaundice by blanching the skin against the bony prominence h. The presence of yellowish discoloration of the skin seen after blanching the skin is indicative of jaundice. Yellowish discoloration of the palms and the soles is a danger sign. Palpate the abdomen and confirm all the findings of inspection. It is very important to examine the testis in a male baby.

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Record

It is important to document the records on case record for future reference.

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Examination at discharge

Before discharge another examination is done. The aim is to

ensure that baby is normal on exclusive breast feeds.

Objectives

- To screen that heart is normal
- To ensure baby has no significant jaundice or danger signs
- To counsel regarding follow up and danger signs

The examination at discharge includes asking the mother about breast feeding and general activity of the baby. The mother should be asked for any problems she is having.

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Examination at discharge – Look, listen, feel

The next step includes examination of the baby following the principles of look, listen and feel with special stress on feeding, icterus and follow up advice. Look at the baby, is the baby icteric. Note the icterus in the baby in the record sheet. It is very important to note for the presence of any eye or umbilical discharge. Count the respiratory rate and watch for retractions. It is equally important to auscultate the heart for any abnormal sound or murmur at the time of discharge since there are some cardiac malformations which may be picked up at discharge. Feel for the temperature and depth of icterus and confirm all the findings of inspection.

Before the mother and newborn are sent home, it is important to explain to the mother, the importance of continuation of breast feeding once again and check for feeding. It is also equally important to counsel the mother about the danger signs on when to seek referral.

It is very important to document the records on a sheet of

paper for future note and reference.

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Danger signs

While explaining the mother about the follow up advice, it is very important that the mother is counseled about the danger signs, when the mother has to seek immediate referral.

The important danger signs are given below:

1. Not feeding well
2. Less active than before
3. Fast breathing (more than 60 breaths per minute)
4. Moderate or severe chest in-drawing
5. Grunting / moaning
6. Convulsions
7. Floppy or stiff
8. Temperature $>37.5^{\circ}\text{C}$ or $<35.5^{\circ}\text{C}$
9. Umbilicus draining pus or umbilical redness extending to skin.
10. More than 10 skin pustules or bullae, or swelling, redness, hardness of skin
11. Bleeding from stump or cut

All mothers should be advised about how to recognize the danger signs and to report immediately if their babies develop one or more of them.

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Examination on follow-up

All babies are examined again on follow up or when mother brings for some concern. The main aim is to ensure that baby

is growing well on exclusive breast feeds & give immunization as per national policy

Objectives

- To record the anthropometry weight , head circumference
- To ensure baby has no malformations like – cardiac murmurs

The examination at follow up asking the mother about breast feeding and general activity of the baby. The mother should be asked for any problems she is having. The next step includes examination of the baby following the principles of look, listen and feel with special stress on feeding and icterus and next follow up advice if the mother has no other complaints.

The recording of weight and head circumference is important because :

- It provides a baseline anthropometric data and is a part of growth monitoring (with length, head circumference)
- Indicates that the baby is receiving adequate feeding
- It defines low birth weight babies at risk
- It helps to calculate drug doses
- It helps to monitor response to treatment
- It identifies babies who have an underlying condition and need examination assessment and treatment

Slide EN-27,28

Normal feeding

An important part of the examination at 24 hours is to check for feeding adequacy. It is very important to note that the baby is well positioned and attached.

This baby is well positioned as you notice

- o Head in line with body
- o Well supported
- o Turned towards the mother
- o Abdomen touches the mother abdomen

This baby is well attached as

- o Mouth wide open
- o Lower lip everted
- o Little areola visible
- o Chin touches mother breast

It is normal for a breast fed infant to pass urine six or more times a day after day 2. The baby may pass stool as frequently as after every feed or no stool for 2-3 days for the first 2-3 months. Baby would normally sleep comfortably for at least 2 hours after an adequate breast feed. A newborn baby generally loses weight for the first few days and regains birth weight by 7-10 days. Female baby may have some vaginal bleeding for a few days during the first week after birth. It is not a sign of a problem.

Slide EN- 29,30

Normal respiration

Normal respiratory rate in a newborn baby is 30 to 60 breaths per minute. The baby should not have any chest in-drawing or grunting. When assessing breathing it is important to count the respiratory rate for a full minute.

Babies may breathe irregularly for short periods of time. If you are not sure of breaths per minute, it is advisable to repeat the count.

Small babies (less than 2.5 kg at birth or born before 37 weeks gestation) may have some mild chest in-drawing and may periodically stop breathing for a few seconds.

Note the baby in this picture is having retractions.

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Caput succedaneum vs. cephalohematoma

Caput is a normal finding in a newborn baby. It is an extraperiosteal fluid collection with poorly defined margins, which extends over midline and across suture lines. It extends over the presenting portion of the scalp and resolves over the first few days. However note the swelling on the left. This swelling is not over the dependent part and is not crossing the suture lines. This swelling is cephalhaematoma. It is a subperiosteal collection of blood resulting from the rupture of superficial veins between the skull and the periosteum.

Slide EN-32,33

Umbilicus

The normal umbilicus is bluish-white in color on day 1. Later over the next few days, it begins to dry and shrink and falls off after 7 to 10 days. There should be no discharge from the umbilicus. Red skin or red umbilicus indicates local infection. The umbilicus draining pus or umbilical redness with swelling extending to skin is a danger sign and indicates immediate referral. A small umbilical hernia does not need treatment until 2 years of age.

Slide EN-34,35,36

Skin

Small pearly white papules may be commonly seen over the nose of newborn babies. This is known as milia and can be seen in the first picture. In addition to above another transient condition seen in this period is Erythema Toxicum. Erythema toxicum consists of scattered macules, papules or rarely vesicular lesions over the extremities and the trunk with a pearly white centre and a peripheral erythema. However look at the last two pictures. This baby has pustular lesions. The next slide shows you the classical appearance of a pustule more closely. More than 10 pustules are a danger sign. This baby should be referred immediately. Less than 10 are a local skin infection and should be treated immediately.

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Posture

Look at the posture of a newborn baby. The normal resting posture of a term newborn baby include loosely clenched fists, and flexed arms, hips, and knees while small babies (less than 2.5 kg at birth or born before 37 weeks gestation) keep their limbs extended. Babies born in the breech position may have fully flexed hips and knees; the feet the mouth; and legs may even reach near the mouth. Asymmetry in the posture indicates an abnormality. The newborn baby in Slide 40 is keeping the Right Upper limb extended. This could indicate an injury to the brachial plexus right side. Hence abnormal posture of a baby should be noted and recorded.

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Color

Look at the color of the baby on the left. The baby is pink

and normal. However, the baby on right appears icteric. Peripheral bluish discoloration of the limbs may persist for the first few hours and may be normal. This is also known as acrocyanosis. Take a closer look at the other baby in the pictures on the right in slide 43. This baby has central cyanosis, which is an abnormal finding.

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Case scenario 1

This baby should be examined closely with the principles of look, listen and feel.

1. The concerns in this baby are
 - a. To ensure that malformations are picked
 - b. To ensure establishment of breast feeding
 - c. Temperature is Normal and later classify baby as normal or abnormal
2. Problem is baby has danger sign of jaundice appearing within 24 hour so he needs referral.

Slide EN-43

Case scenario 2

Birth Weight less than 1500 grams this is a danger sign needing referral , above all he has lost 200 gms , baby needs immediate referral.