The First Year of Life

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ROUTINE EXAMINATION OF
THE NEWBORN

Immediately after birth all infants should be examined for the presence of gross congenital abnormalities or evidence of birth trauma. Later—preferably on the morning after delivery—every infant should be examined again in detail. The obstetric notes should be checked to determine whether the infant has been at special risk—for example, from maternal rubella or a difficult delivery—and a systematic approach should be used so that abnormalities are not missed. The infant must be completely undressed and in a good light. The mother should be present during the examination so that the results of the examination can be discussed with her and so that she can voice her anxieties.

Skin

Strawberry naevus

Port wine stain

Neonatal urticaria

Diffuse capillary naevi on the face, eyelids, or occiput are common and resolve within a few months.

The "strawberry mark" starts as a tiny red spot and grows rapidly for several weeks until it has a raised red appearance with small white areas, suggesting the seeds of a strawberry. Such marks are common in pre-term babies. They may occur anywhere on the body but cause no symptoms, except on the eyelids, where they may prevent easy opening of the eyes and need treatment. Strawberry naevi grow, often rapidly, for three to nine months, but at least 90% resolve spontaneously—either completely or partially. Resolution usually begins at 6 to 12 months and is complete in half the children by the age of 5 and in 70% by the age of 7 years. In 80% of cases these naevi resolve completely without trace.

The port wine stain is not raised and may be extensive. It does not resolve, but the skin texture remains normal. When the naevus occurs in the distribution of the trigeminal nerve there may be an associated intracranial vascular anomaly.

Neonatal urticaria (erythema "toxicum") consists of blotchy ill-defined areas of bright erythema surrounding white or yellow wheals which may resemble septic spots. It usually appears on the 2nd day of life and in most infants clears within 48 hours. The lesions contain many eosinophils and have no pathological importance. By ringing individual lesions with a skin pencil they can be shown to disappear in a few hours, to be replaced by others elsewhere. This contrasts with septic lesions, which appear later and do not resolve so quickly.

Mongolian blue spots are patchy accumulations of pigment, especially over the buttocks and lower back in infants of races with pigmented skins. They are common in babies of African or Mongolian descent, but also occur in Italian and Greek babies. They may be mistaken for bruises and a wrong diagnosis of non-accidental injury made. They become less obvious as the skin darkens.

A midline pit over the spine is most commonly found over the coccyx, where it does not usually communicate with the spinal canal. A midline pit anywhere else along the spine may be connected with an underlying sinus, which may communicate with the spinal canal and requires excision to prevent the entry of bacteria and subsequent meningitis.

Head and neck

An infant with the Pierre Robin syndrome has a small lower jaw, glossoptosis, and cleft palate. The infant must be nursed prone to prevent his tongue falling backwards and occluding the airway. A small jaw may occur alone or with other abnormalities.

Nodules of epithelial cells resembling pearls (Epstein's pearls) just lateral to the midline on the hard palate are a normal finding. A cluster of these pearls is present at the junction of the hard and soft palates.

Heart murmurs

In the first two days of life the most common problem is an infant who is feeding normally but is found to have a short systolic murmur during a routine examination. The murmur is usually due to a patent ductus arteriosus and has usually disappeared by the time the infant is examined again at 7 days. An ECG or chest radiograph is unnecessary.

If a long murmur, initially absent, is first heard around the 8th day of life a chest radiograph and ECG should be performed and the infant seen by a paediatrician. Most of these murmurs are due to ventricular septal defect or mild pulmonary stenosis with no symptoms. Most of the ventricular septal defects close spontaneously before the infant reaches the age of 5 years.

If there is any murmur and the infant is feeding poorly or has a respiratory rate faster than 60/min at rest, a chest radiograph and ECG should be performed and the baby seen by a paediatrician urgently. These symptoms and signs indicate multiple heart defects.

Cyanosis of the hands and feet has no importance if the tongue is of normal colour.

The normal respiratory rate at rest is less than 50/min, and there should be no recession of the chest wall or below the mandible.

Genitalia

A hooded prepuce suggests hypospadias with the urethral orifice at the base of the glans penis. If the urethral meatus is adequate and there is no curvature of the penis (chordee) no immediate treatment is needed, but the infant must not be circumcised and should be referred to the plastic surgeon's next clinic.

If the urethral orifice is nearer the perineum, the adrenogenital syndrome should be considered. In the adrenogenital syndrome cortisol secretion fails and the adrenals produce excessive androgen. Girls become virilised, with enlargement of the clitoris and fusion of the labia and may be mistaken for boys. In boys the genitalia are normal.

Inter-sex is a less common cause of ambiguity of the external genitalia, and a paediatrician should be consulted without delay. An accurate diagnosis is an emotional and social emergency.

Small hydrocoeles usually disappear spontaneously during the first month.

Undescended testis is especially common in preterm infants, in whom the testes usually descend during the first three months after birth. A full-term infant with failure of descent of one or both testes should be referred for a surgical opinion. As the cremasteric reflex is usually absent at birth, the testis cannot be retractile. If there is any doubt about whether a testis is descended the examiner should (a) palpate the pubic tubercle with one hand, (b) hold the testis between the thumb and forefinger of the other hand and gently draw it down to its fullest extent, then (c) measure the distance from the pubic tubercle to the centre of the firm globular testis.

At term the testis, if fully descended, lies 4-7 cm from the tubercle. If the distance is under 4 cm the testis has not completely descended. In preterm babies, who are more likely to have undescended testes and whose testes are smaller, 2.5 cm has been arbitrarily chosen to divide descent from non-descent.

In girls a small amount of vaginal bleeding is common, usually five to seven days after birth, and follows excretion of maternal or placental oestrogens which are transmitted to the fetus before birth. White vaginal discharge or prolapse of the vaginal mucosa is normal.

In either sex physiological enlargement of the breast may occur towards the end of the first week. This enlargement, which may be unilateral, resolves within a few weeks.

Club foot and extra digits

Muscular imbalance due to the posture of the infant's feet in utero is the commonest cause of club foot. In postural club foot it should be possible to dorsiflex the foot fully and to obtain passive inversion to 90°. The mother should be taught to manipulate the foot through the whole range of movements after each feed, although the shape usually reverts to normal within a few weeks, even without treatment. In contrast, in structural club foot the range of passive movements is restricted, and orthopaedic advice on strapping, manipulation, or serial plasters is needed within 24 hours of birth.

To detect extra digits, the digits should be counted with the infant's palms open, or an extra thumb may be missed. Polydactyly requires the advice of a plastic surgeon to determine which digit should be removed for the best functional result. Extra fingers and toes are often familial and vary from an apparently normal digit to a skin tag. The latter can be tied off with a sterile silk thread and will separate by aseptic necrosis.

Central nervous system

To assess the central nervous system the alertness of the infant and the symmetry of spontaneous movements should be noted. The tension of the anterior fontanelle and the width of the fontanelle should be palpated while the infant is at rest, and the head circumference should be measured. A more detailed neurological examination is not required unless there is a special indication.

Phenylketonuria

SCREENING BLOOD TEST
Including PHENYLKETONURIA (PKU)
It is important that all sections of the form are completed LEGIBLY.

Fill each circle completely with ONE DROP OF BLOOD to soak through to back of card. Allow to dry.

For Laboratory Use

Baby's Surname (BLOCK CAPITALS) [REDACTED]
Baby's First Name(s) [REDACTED]
Mother's First Name(s) [REDACTED]
Home Address [REDACTED]
Baby's Date of Birth: day [] month [] year [] Sex []
Date of First Milk Feeding: day [] month [] year [] Please tick if REPEAT test: ☐
Date of Specimen: day [] month [] year []
Hospital: [] Ward: [] Dept: []
Consultant G.P.: []
Addresses to which reports of positive tests should be sent:
1. Area Medical Officer of area in which mother resides []
2. Originator of request if different from 1 []

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The Guthrie test detects high blood concentrations of phenylalanine, which indicate that the infant probably has phenylketonuria. Drops of blood are taken by heel prick after six days' breast—or bottle—feeding (usually the seventh day of life) and placed on the special absorbent card provided. The blood is usually taken by the health visitor if the infant is at home on the seventh day. If the test is positive the infant should be admitted to hospital to confirm the diagnosis as he may need a special low-phenylalanine diet to prevent brain damage. In some areas a capillary tube of blood is collected (for the Scriver test) instead of the dried blood spot.

Talking to parents

Whenever possible both parents should be seen together. If an abnormality is found during the routine examination some indication must be given to the mother so that arrangements can be made to see both parents.

Particularly if the problem is likely to be long-term the doctor who will continue the long-term care should speak to the parents initially. Ideally, a nurse should be present as well since the parents will probably ask all the questions again as soon as the doctor has left, and the interview should take place in a quiet room uninterrupted by telephones or bleeps.

The diagnosis should be explained in terms that the parents can understand, and the positive aspects should be emphasised. For example, if the probable diagnosis is ventricular septal defect it is not necessary to explain that there is a remote possibility of multiple cardiac defects. And after a difficult forceps delivery it is better to say that most babies develop normally rather than say they may be slightly backward. An unnecessarily pessimistic prognosis based on out-of-date information may alter a mother's attitude towards her baby and impair her attachment to him.

In discussing management the help and support that will be given by social workers or physiotherapists should be emphasised and the parents advised to tell their relations and friends the diagnosis rather than hide it.

If the doctor has only limited experience of the particular problem he should tell the parents that he needs to seek further advice rather than guess at the answer. Parents often cling to the first opinion and may find it difficult to accept a more experienced view later. A statement of the facts, for example that there is an abnormality of the spine, may be given with the assurance that a more experienced doctor will discuss it later.

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Watering eye

If there is persistent watering of the eye with clear fluid the tear duct is probably blocked. No action is required until at least the age of 1 year, when the infant can be referred to an ophthalmic surgeon. Rarely the tear duct is probed, but most ophthalmic surgeons prefer to take no action because the condition resolves spontaneously in virtually all infants and probing may induce fibrosis of the tear duct. If there is repeated or persistent purulent discharge the possibility of chlamydia infection should be considered and arrangements made with the laboratory for specimens to be taken.