POLTAVA STATE MEDICAL UNIVERSITY

MORPHOLOGICAL AND FUNCTIONAL FEATURES OF THE SKIN AND ITS DERIVATIVES IN CHILDREN. FEATURES OF THE SUBCUTANEOUS TISSUE. SEMIOTICS OF THE SKIN DISEASES. ANATOMIC AND PHYSIOLOGIC FEATURES OF THE MUSCULOSKELETAL SYSTEM IN CHILDREN. SEMIOTICS OF THE DISEASES OF THE MUSCULOSKELETAL SYSTEM.

Assoc. Professor
Soloviova Halyna

PLAN OF THE LECTURE

- 1. The embryogenesis of the muscles and skeletal system in children.
- 2. Chronology of human dentition.
- 3. Basic physiological functions of a skin.
- 4. The examination of the skin in children.
  5. Semiotics of skin diseases.
- 6. Criterion of an estimation of a rash.
- 7. Bone disorder syndromes.

MUSCLES AND SKELETAL SYSTEM

MUSCLES

•The distribution of muscle tissue in a newborn is different from children of other age groups and adults. The main part is in the muscles of the body, while in other periods - in the muscles of the extremities.

•First of all, the large muscles of the shoulder and forearm develop, and later the muscles of the hands. Up to 6 years old, fine work with children’s fingers fails.

•At the age of 6-7 years may gradually teaching children writing.

•At the end of puberty, there is an increase in the muscles not only of the arms, but also of the muscles of the back, arms and legs.

SKELETAL SYSTEM

SKELETAL AGE

- 0-5 years: presence of ossification centers
- 5-14 years: calcification of cartilaginous areas
- 14-25 years: epiphyseal fusion

CHRONOLOGY OF HUMAN DENTITION (PRIMARY)

	AGES (MOS)	AGES (MOS)
	Maxillary	**Mandibular**
Central incisors	**6-9**	**5-8**
Lateral incisors	**9-11**	**7-10**
Cuspids	**11-22**	**17-21**
First molars	**11-17**	**12-18**
Second molars	**22-30**	**22-30**

CHRONOLOGY OF HUMAN DENTITION (PERMANENT TEETH)

	AGES	AGES
	Maxillary	**Mandibular**
Central incisors	**6 ½ - 7 ½**	**6 ½ - 7**
Lateral incisors	**6 ½ - 8 ½**	**6 ½ - 7 ½**
Cuspids	**11-12**	**11-12**

CHRONOLOGY OF HUMAN DENTITION (PERMANENT TEETH)

	AGES	AGES
	Maxillary	**Mandibular**
First premolars	**10-11**	**10-11**
Second premolars	**11-12**	**11-12**
First molars	**6-7 ½**	**5 ½ - 6 ½**
Second molars	**12-13**	**11 ½ - 12 ½**
Third molars	**18-22**	**17-24**

SKIN

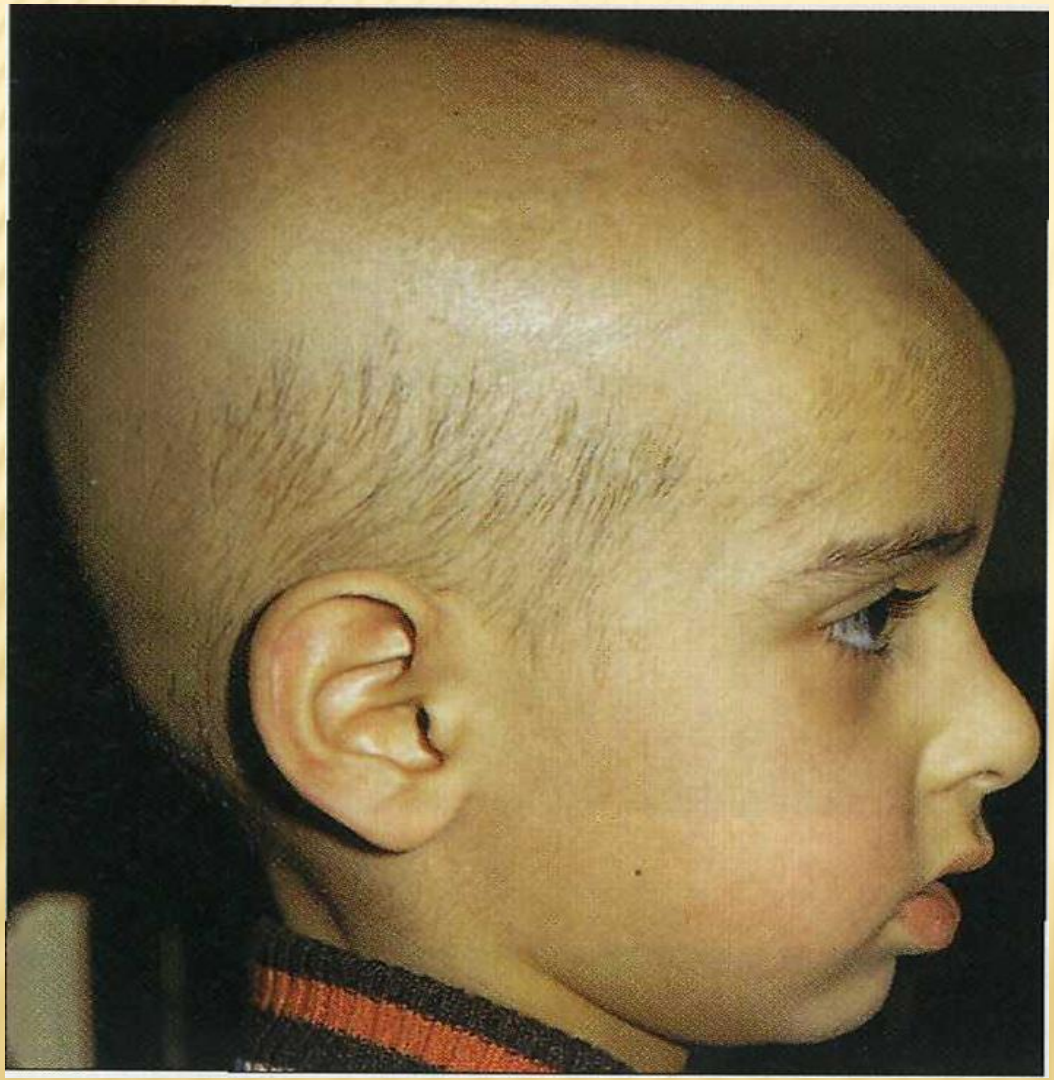
BASIC PHYSIOLOGICAL FUNCTIONS OF A SKIN.

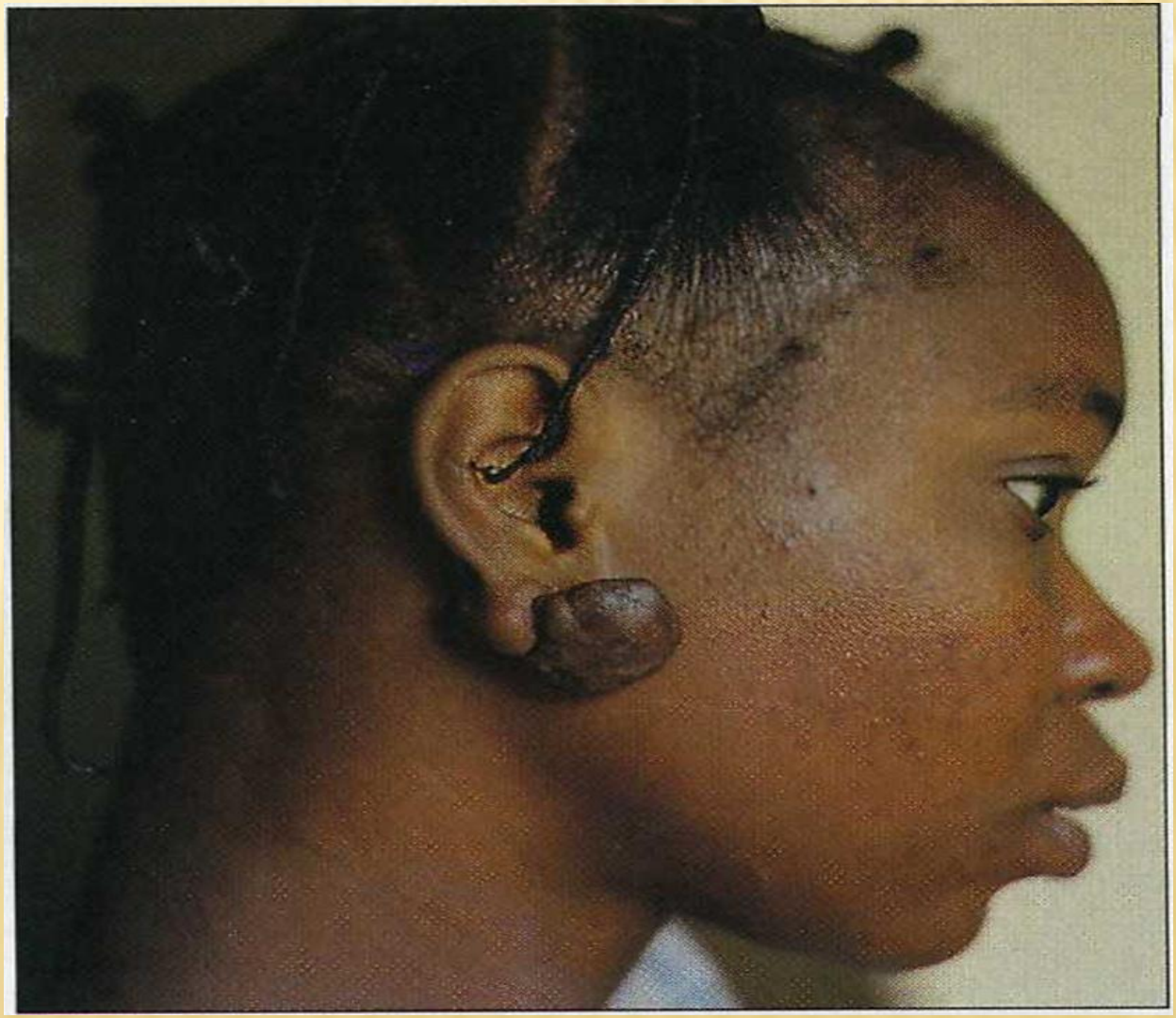
- 1.Protective.
- 2.Bacterizidic.
- 3.Termoregulation.
- 4.Respiratory.
- 5.Deponation.
- 6.Fermentation.
- 7.Reception.
- 8.Excretation.
- 9.Resorbtion.
- 10.Pigmentation.
- 11.Syntesis of vitamins.
- 12.Secretation.
- 13.Changing.

THE COMPLAINTS:

- - Change of colour;
- - Change of properties of a hair and nails;
- - Change of sensitivity;
- - Tenderness;
- - Sweating;
- - Dryness;
- - Itching;
- - Presence of eruptions;

CHANGE OF PROPERTIES OF A HAIR





CHANGE OF PROPERTIES OF NAILS

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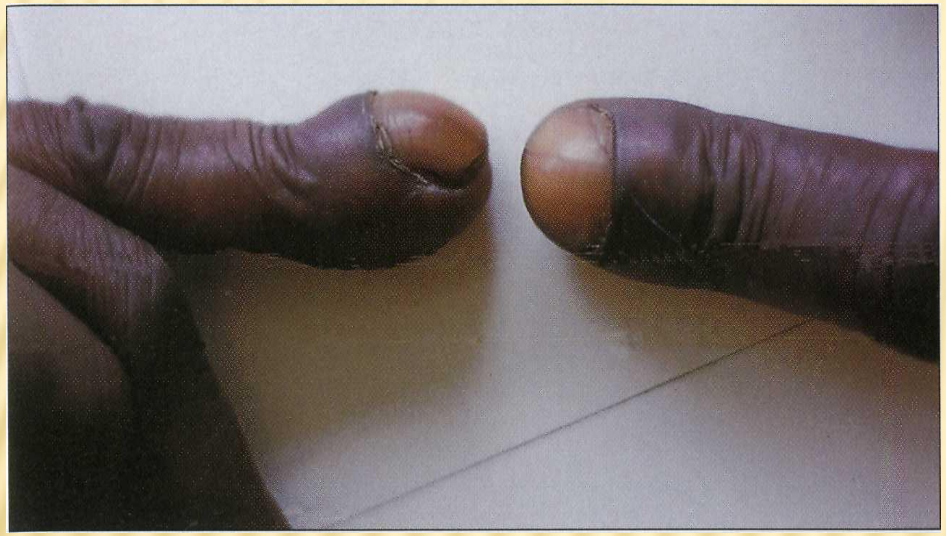
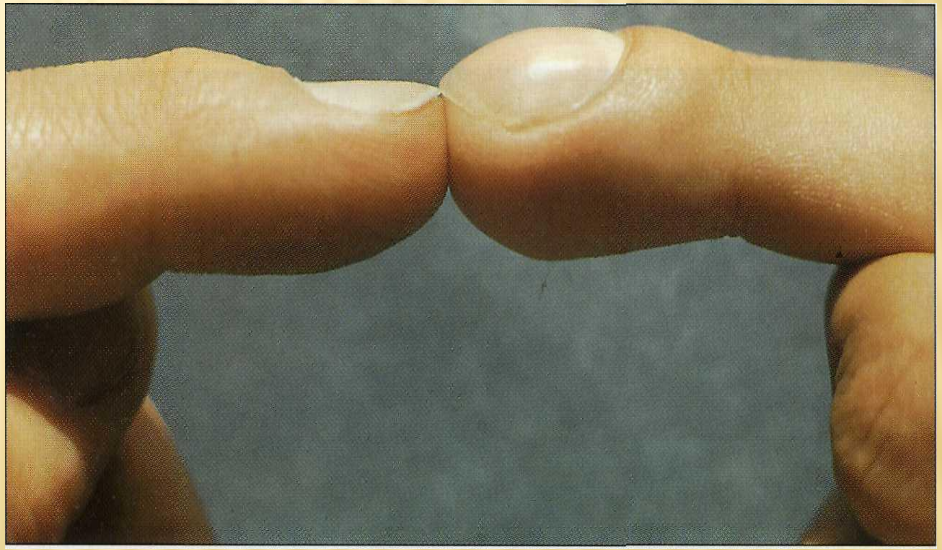




PALPATION:

- elasticity;
- temperature;
- tenderness;
- dryness or moistness;
- thickness of skin fold;
- estimation of a condition of capillaries;
- estimation eruption (above, on equal of skin, proof or disappear at pressing).

SEMIOTICS OF SKIN DISEASES.

Primary morphological elements.

Elements with cavity .

Elements without cavity .

Secondary morphological elements.

CRITERION OF AN ESTIMATION OF A RASH:

- 1. Size.
- 2. Form.
- 3. Colour.
- 4. Consistence.
- 5. Quantity.
- 6. Character.
- 7. Localisation
- 8. Acts above a surface of a skin or not.
- 9. Is accompanied by a pain, itching.
- 10. Its development.

PRIMARY LESIONS OF SKIN

Uncavitary (nonvesicle):

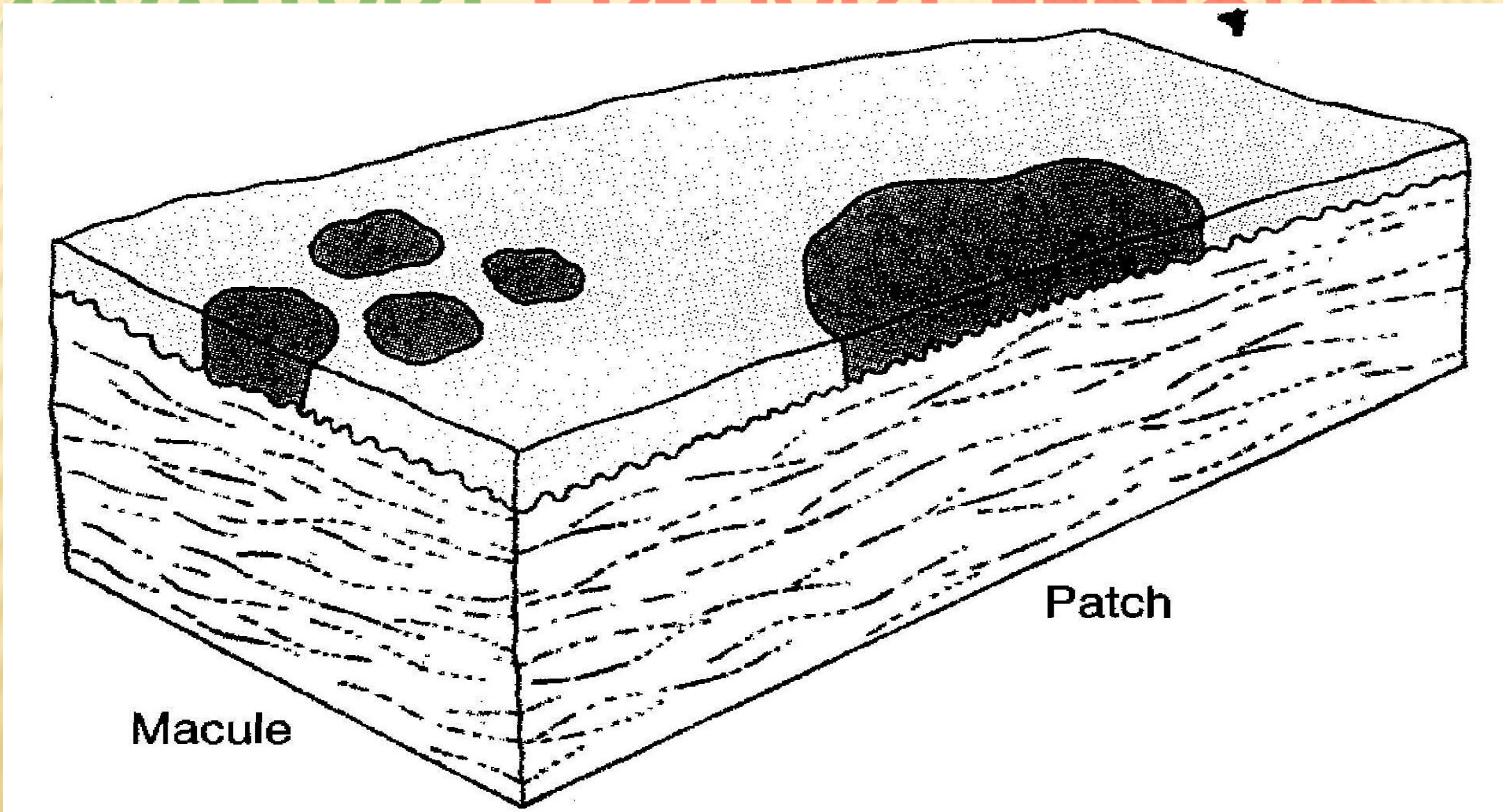
- Maculae
- Patch
- Papulae
- Plague

PRIMARY LESIONS OF SKIN

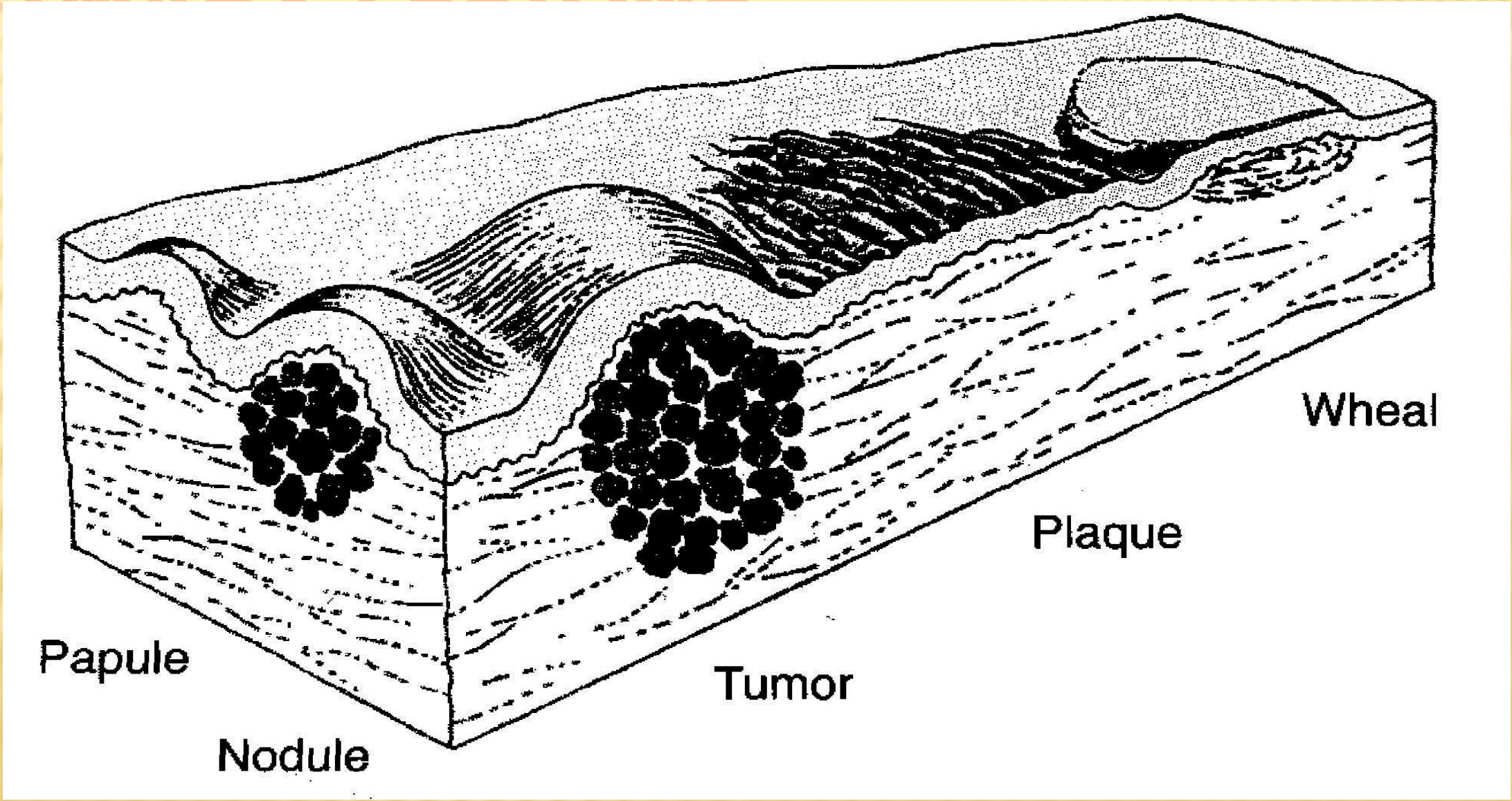
Uncavitary (nonvesicle):

- Nodule
- Tumor
- Tuberculum
- Urtica

UNCAVITARY PRIMARY LESIONS



PRIMARY LESIONS

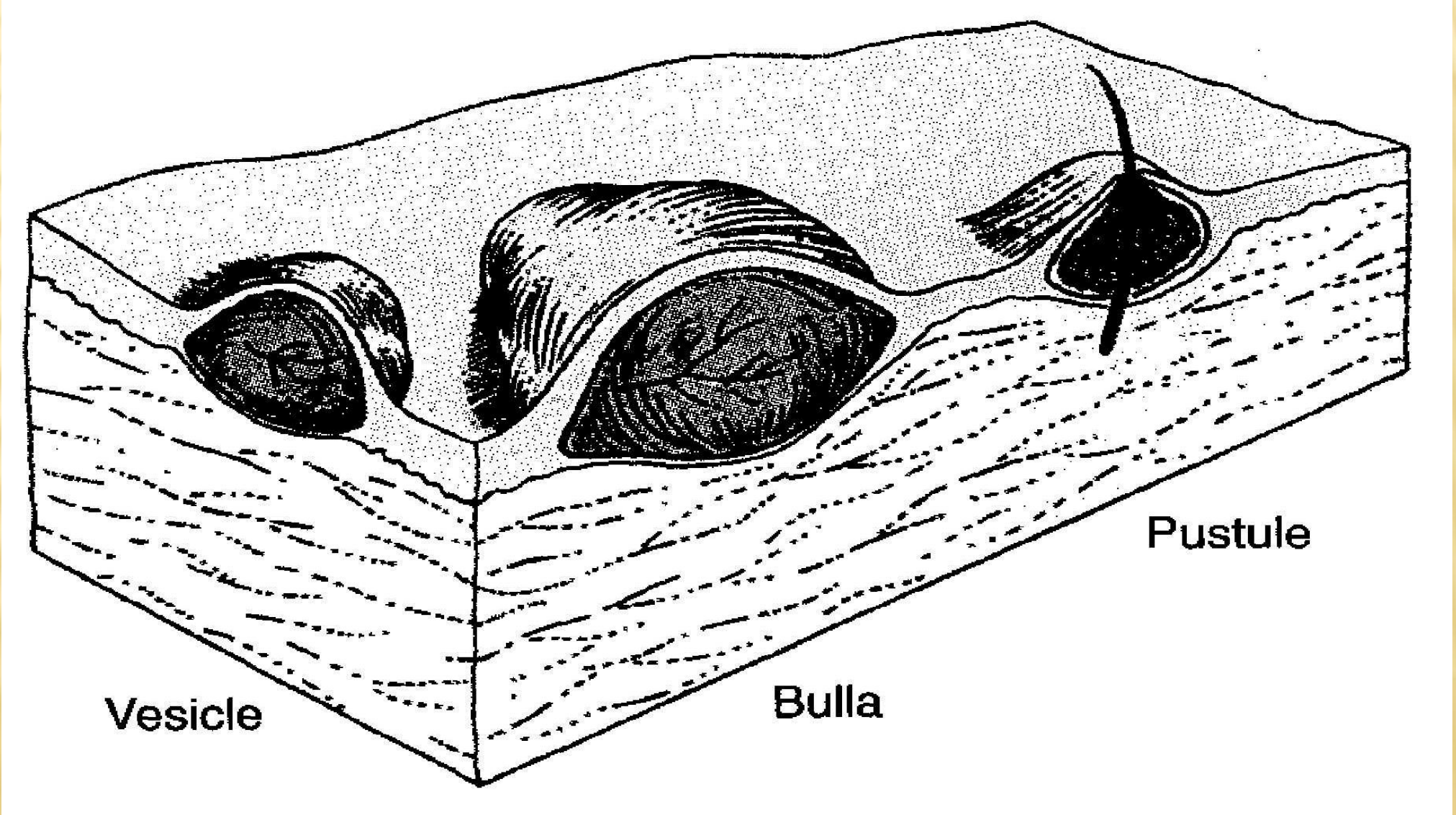


PRIMARY LESIONS OF SKIN

Cavitary (vesicle lesions):

- Vesicle
- Pustule
- Bulla

CAVITARY



ELEMENTS WITH CAVITY

- Vesicle- during herpes

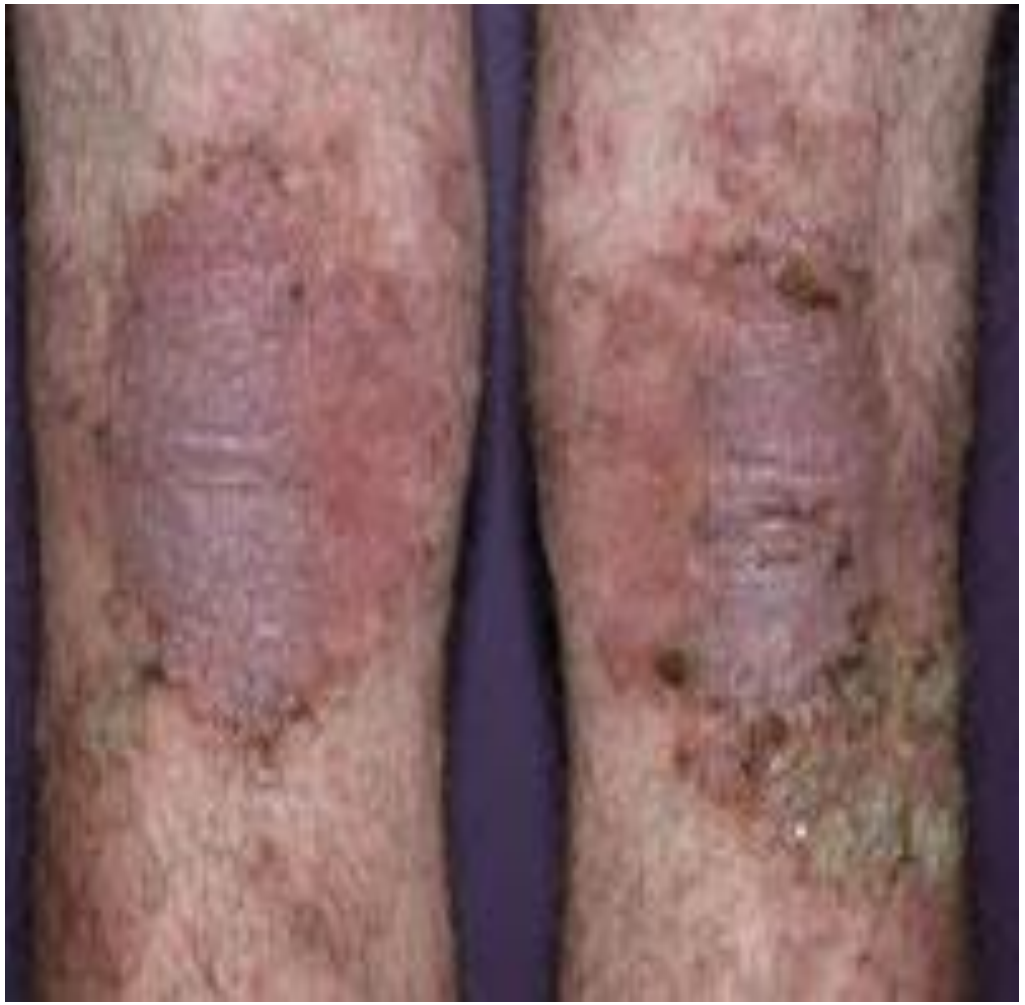
ELEMENTS WITH CAVIT

- Vesicle during chickenpox

SECONDARY MORPHOLOGICAL ELEMENTS

- pigmentation
- scalling:
  macroscalling,
  microscalling
- **crust**
- fissure: deep, superficial - abrasion
- ulcer
- **scar**
- lichenification
- **vegetation**
- erosion

SECONDARY MORPHOLOGICAL ELEMENTS



- **pigmentation**
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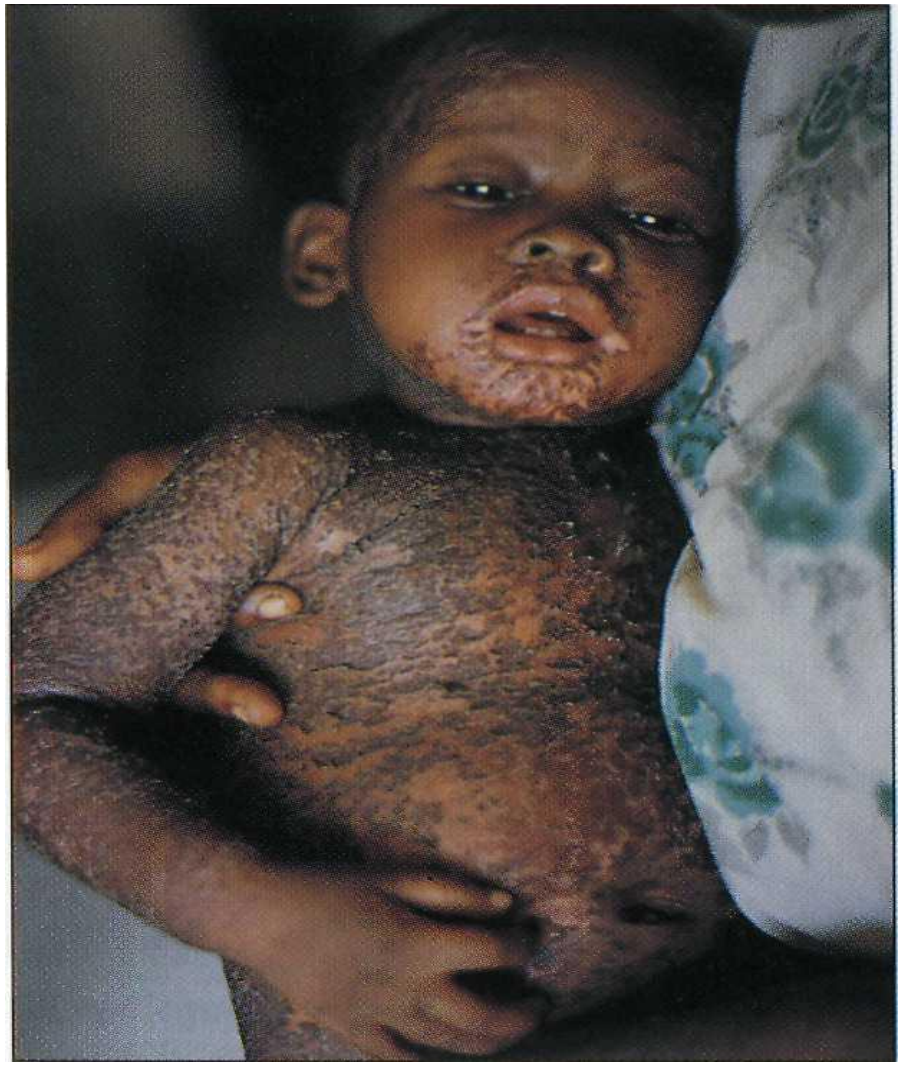

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THE SKIN OF THE NEWBORN

- Milia. White papules on the tip of the nose are hyperplastic sebaceous glands, the effect of mate transplacental hormones. They disappear with desquamation.

THE SKIN OF THE NEWBORN

- Erythema toxicum of the newborn A benign, self-limiting common phenomenon of erythematous, maculo-papular or vesicular character. Eosinophilia and the presence of eosinophils in the vesicles indicate the allergic aetiology. The rash becomes confluent and intensified in areas subject to irritation .

THE SKIN OF THE NEWBORN

- Physiological desquamation Paper-thin peeling. The skin beneath is healthy. This process is more marked in areas of irritation

THE SKIN OF THE NEWBORN

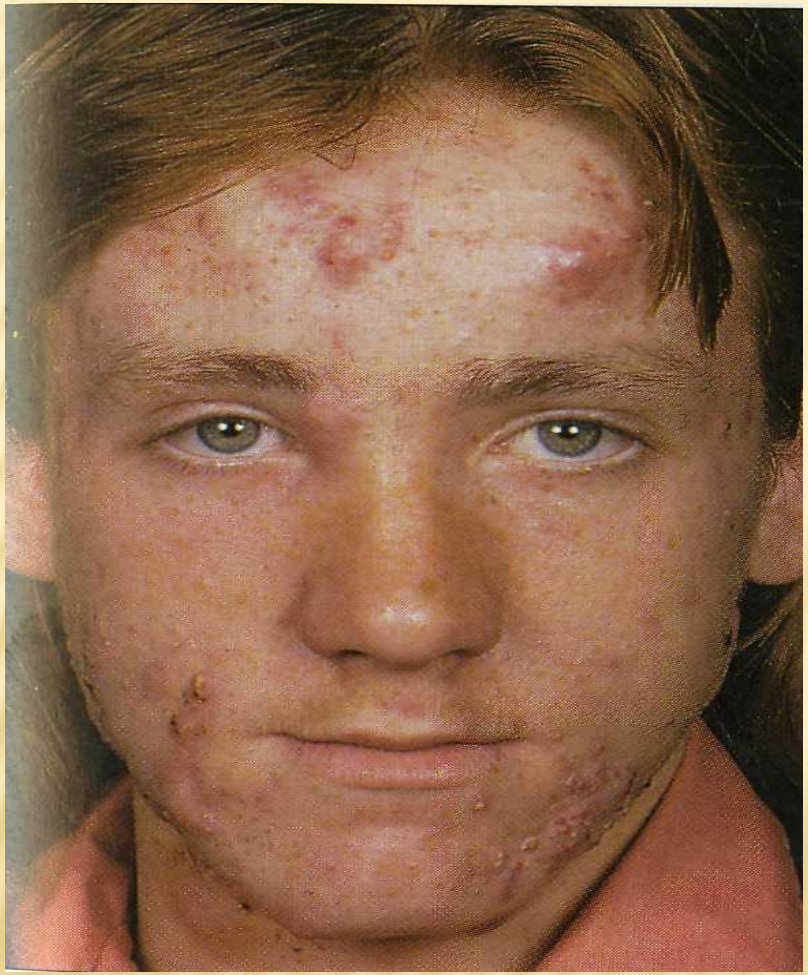
- Physiological jaundice. An unconjugated transitory hyperbilirubinaemia appearing within the 2nd and the 6th day after birth due to deficient enzyme glucuronyl-transferase activity and immaturity of liver function to metabolise bilirubin.

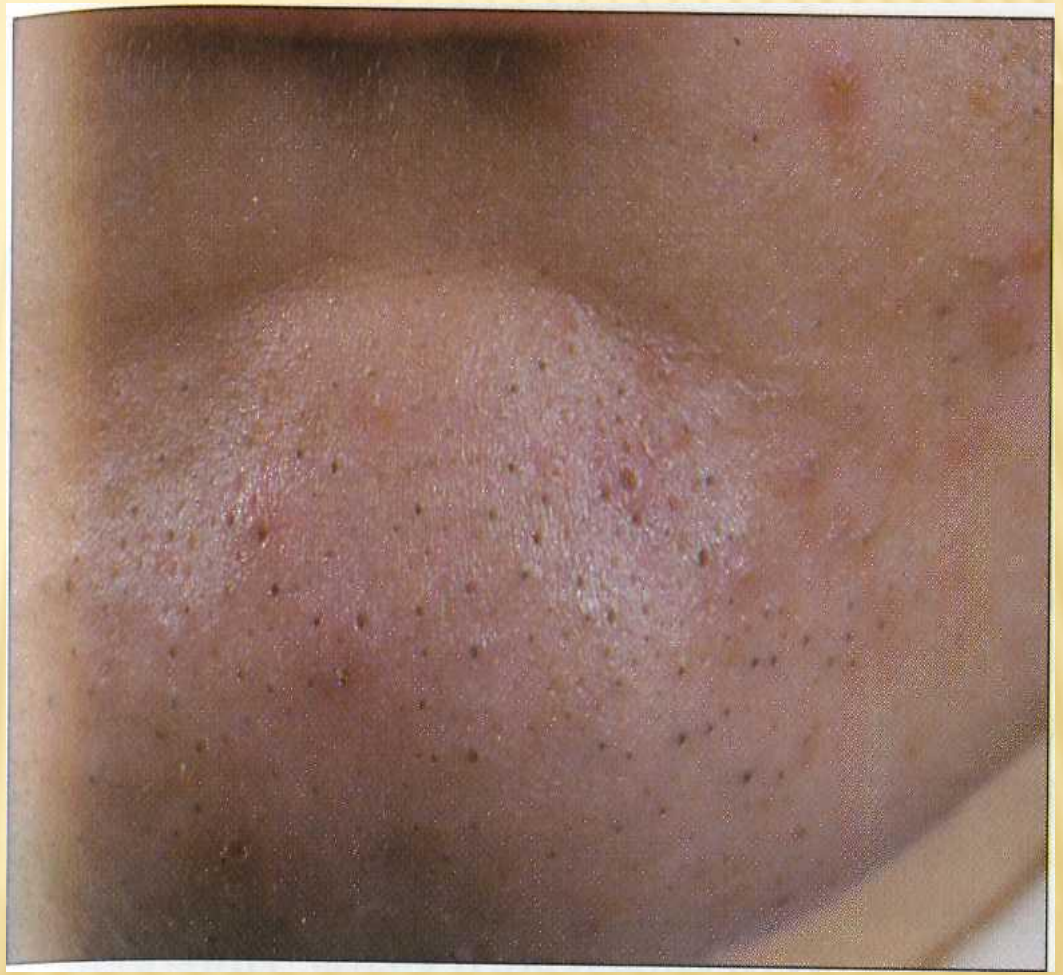
THE SKIN OF THE NEWBORN

A mature newborn Delivery was spontaneous at 40 weeks'gestation. The skin is bright red and covered with vernix caseosa, a foetal product of the sebaceous glands, shed cells and hair. The eyes are closed; the limbs are held in foetal flexure position. The creases visible on the left palm and the acrocyanosis of the perioral area and lower part of the extremities are normal.

CONTACT DERMATITIS

ADOLESCENT ACNE





BONE SYSTEM

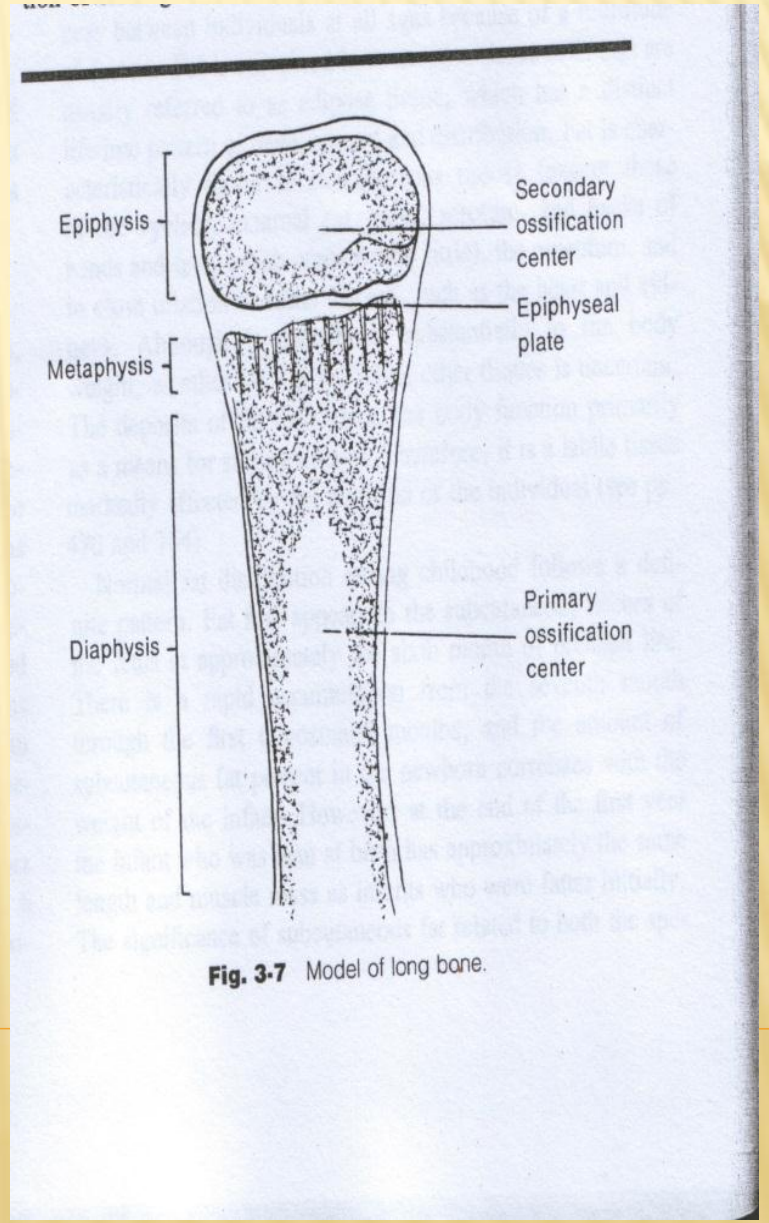


Fig. 3-7 Model of long bone.

EXAMINATION OF EXTREMITIES.

- Each extremity is inspected for symmetry of length and size; any deviation is referred for orthopedic evaluation. The fingers and toes are counted to be certain of the normal number. This is so often taken for granted that an extra digit (polydactyly) or fusion of digits (syndactyly).

RICKETS

- is a disease of infants and young children with bone formation disorder and bone mineralization deficiency, the leading pathogenetic link of which is a deficiency of vitamin D and its active metabolites during the period of the most intensive growth of the body

BOWLEG FIG.

KNOCK-KNEE.

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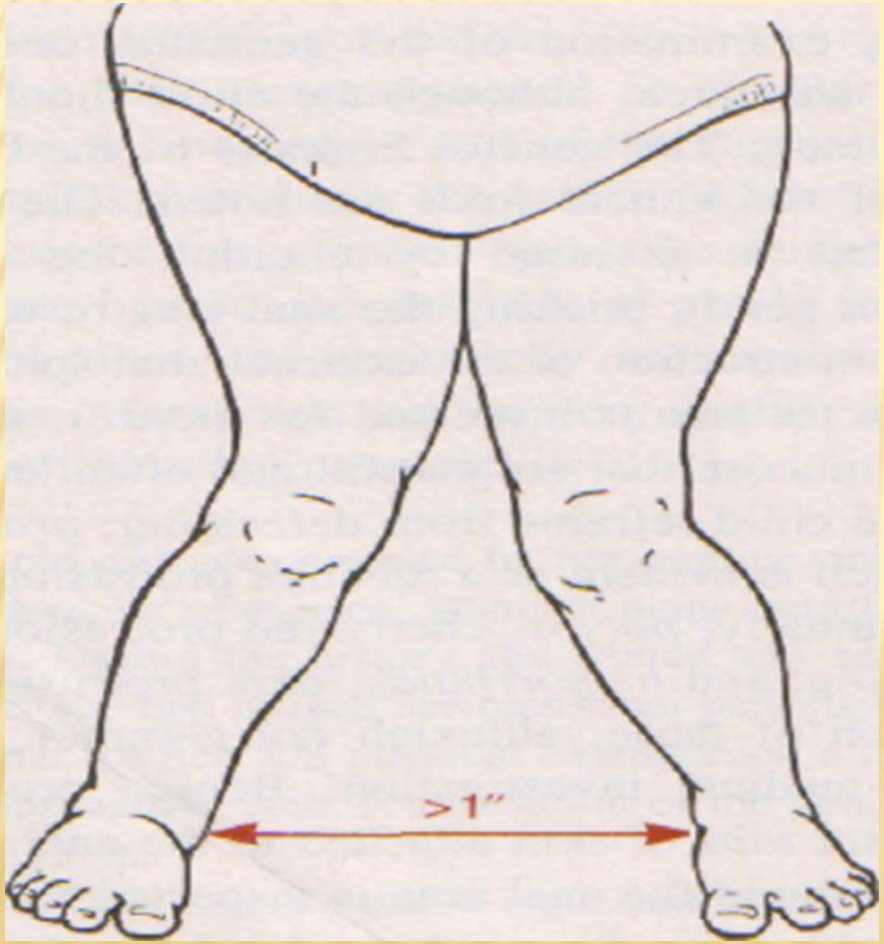
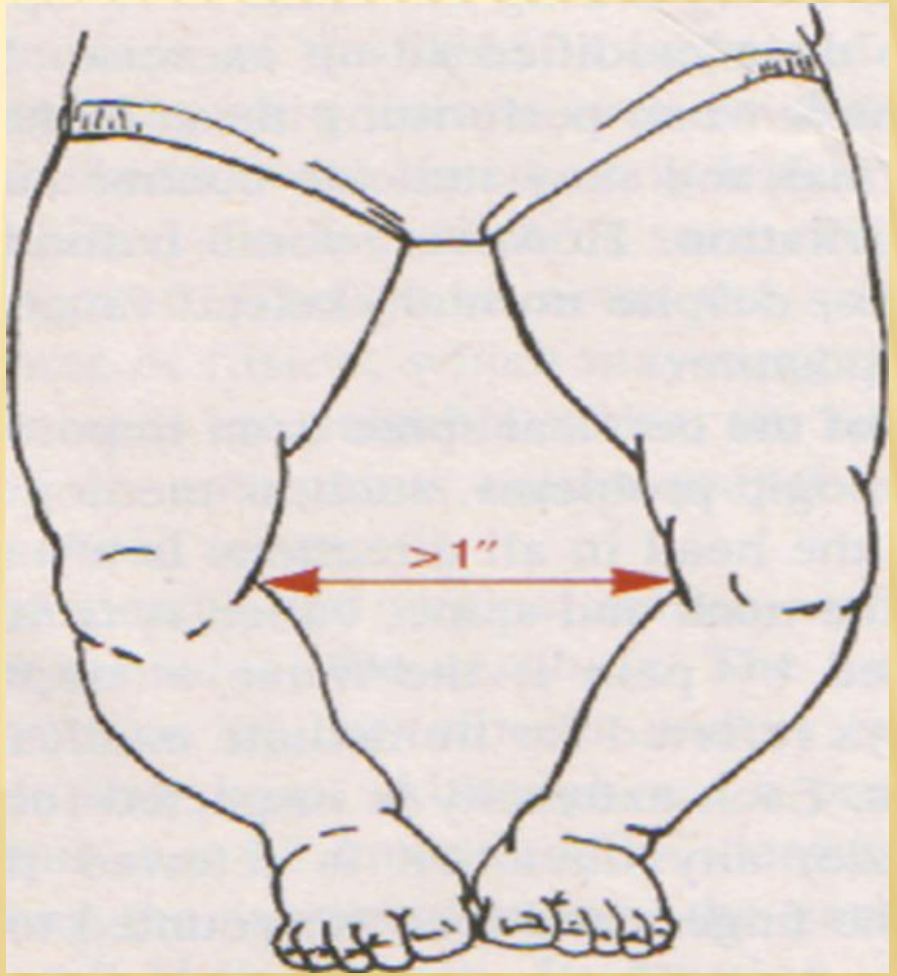




SYMPTOMS OF RICKETS

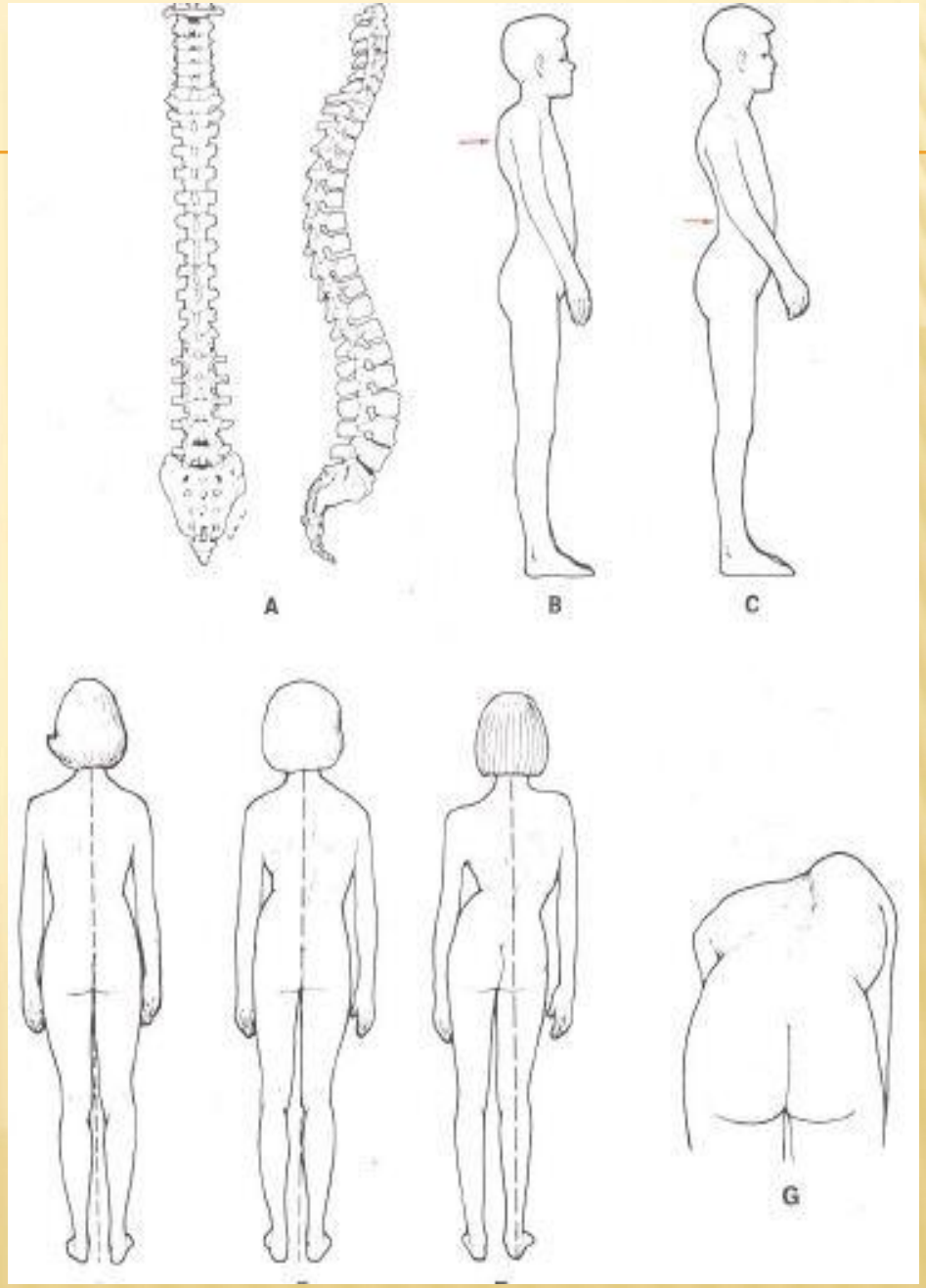
- *Teeth:*
- delayed calcification, especially of permanent teeth;
- maleruption of teeth.
- *Abdomen:* potbelly, constipation.
- Rachitis tetany: seizures.
- Symptoms of rickets are usually found in children less than 2 years of age, some of them in an reduced form can persist for the whole life.

SCOLIOSIS

A lateral curvature of the is spine usually associated with a rotary deformity.

Spine disorders (A – normal spine,

B – kyphosis, C – lordosis, D – Scoliosis I, II, III dg.)



CLINICAL SYMPTOM OF SCOLIOSIS

- Dislocated or subluxated hip.
- Limitation in hip abduction;
- Unequal gluteal or leg folds;
- Unequal knee height (Allis or Galeazzi sign);
- Audible click on abduction (Ortolani sign) – if infant is under 4 weeks of age).

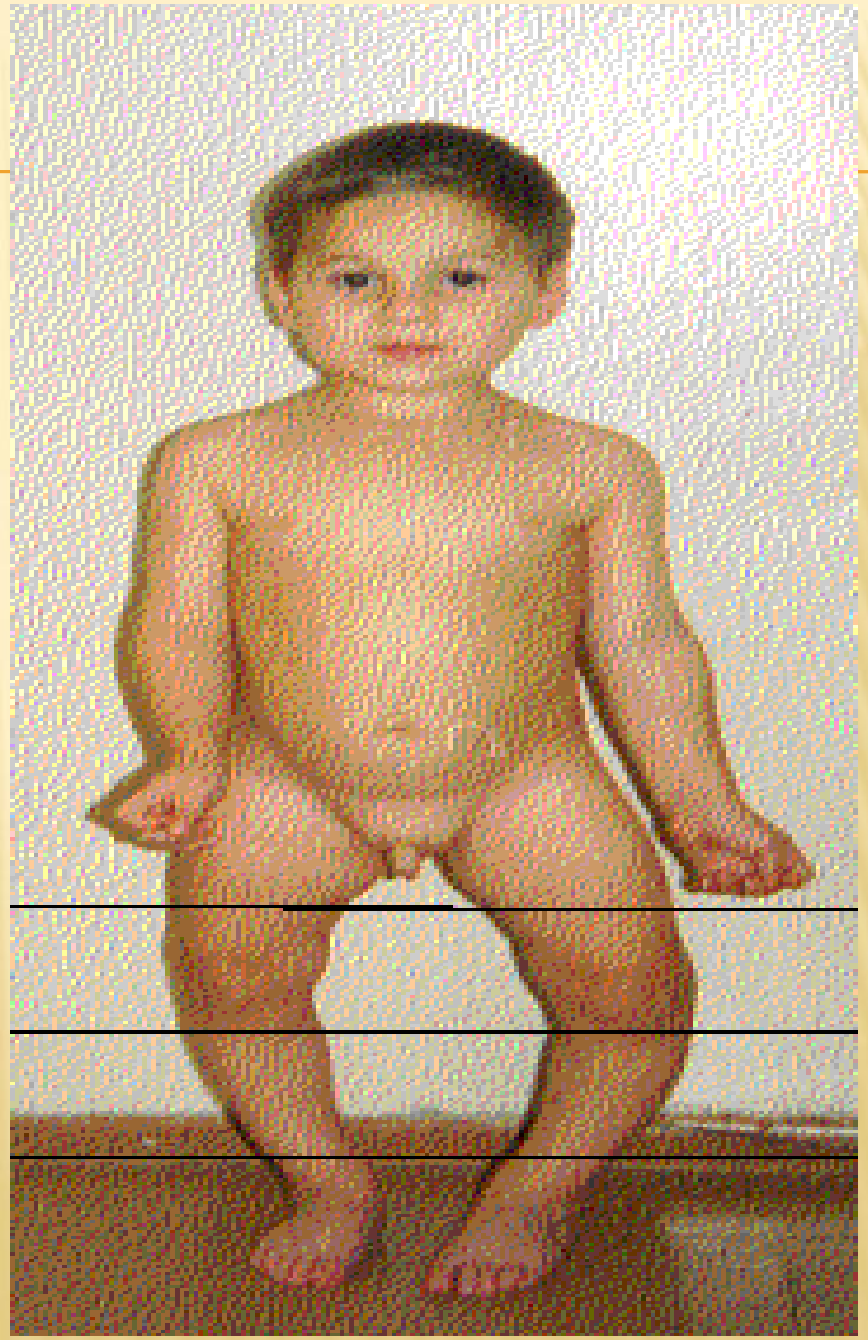
BONE DISORDER SYNDROMES

- Pain syndrome (ossalgia, artalgia).
- Syndrome of hyperplasia of bone tissue.
- Syndrome of osteomalacia (osteoporosis).
- Syndrome of bone inflammation.
- Syndrome of joint inflammation.
- Syndrome of contracture.
- Syndrome of congenital malformation.
- Syndrome of bone damage.

SYNDROME EDWARDS

CONTRACTURE OF PHALANGES

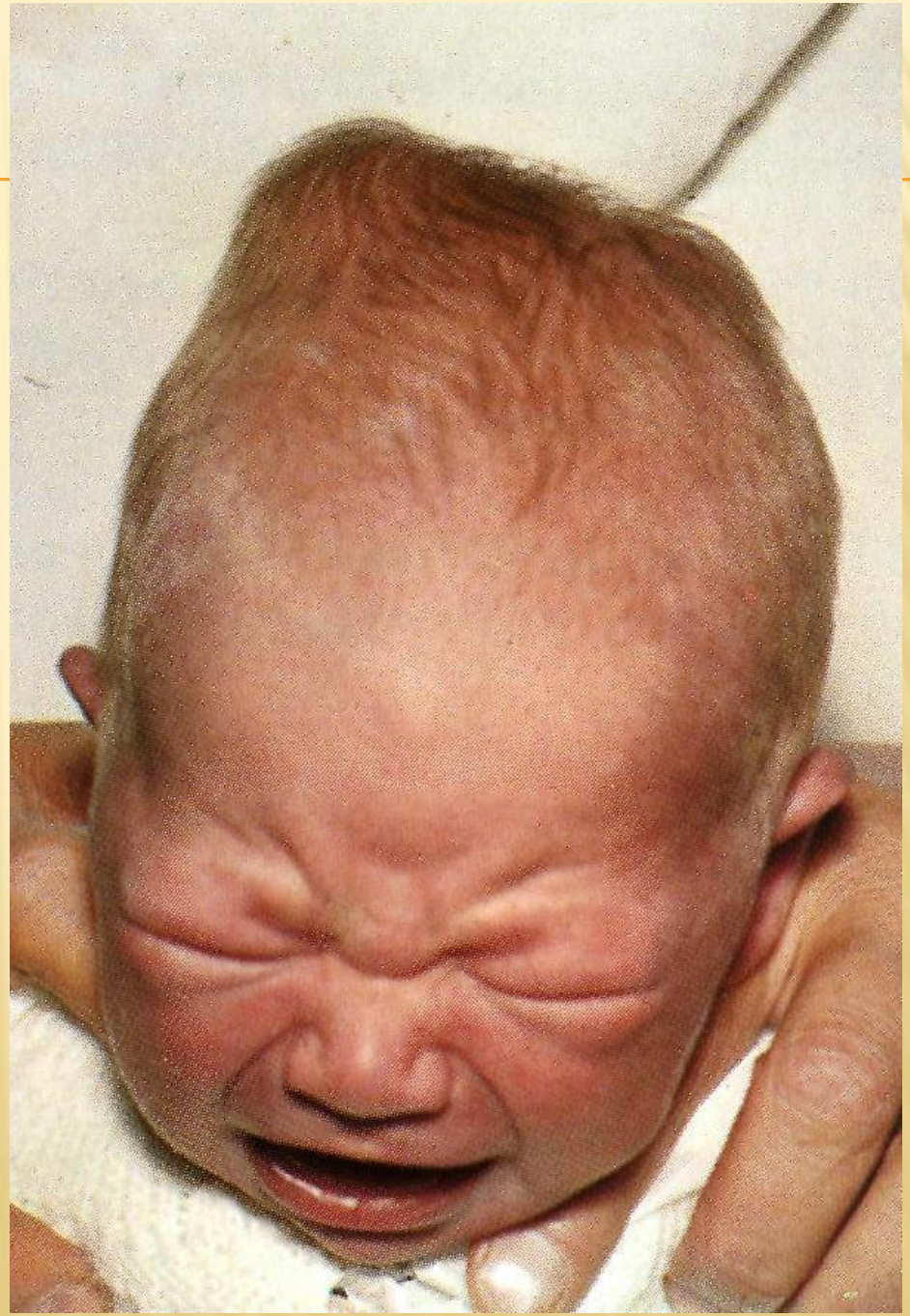
RICKETS



ATOPIC DERMATITIS

CEPHALOGEMATOMA

- Cefalogematoma - a hemorrhage arising between the periosteum and the external surface of the cranial bones. The tumor is limited to the edges of one or another bone of the skull, often parietal, less often occipital. Disappears in 3 - 8 weeks. Treatment is usually not required: with suppuration - surgical treatment, antibiotics

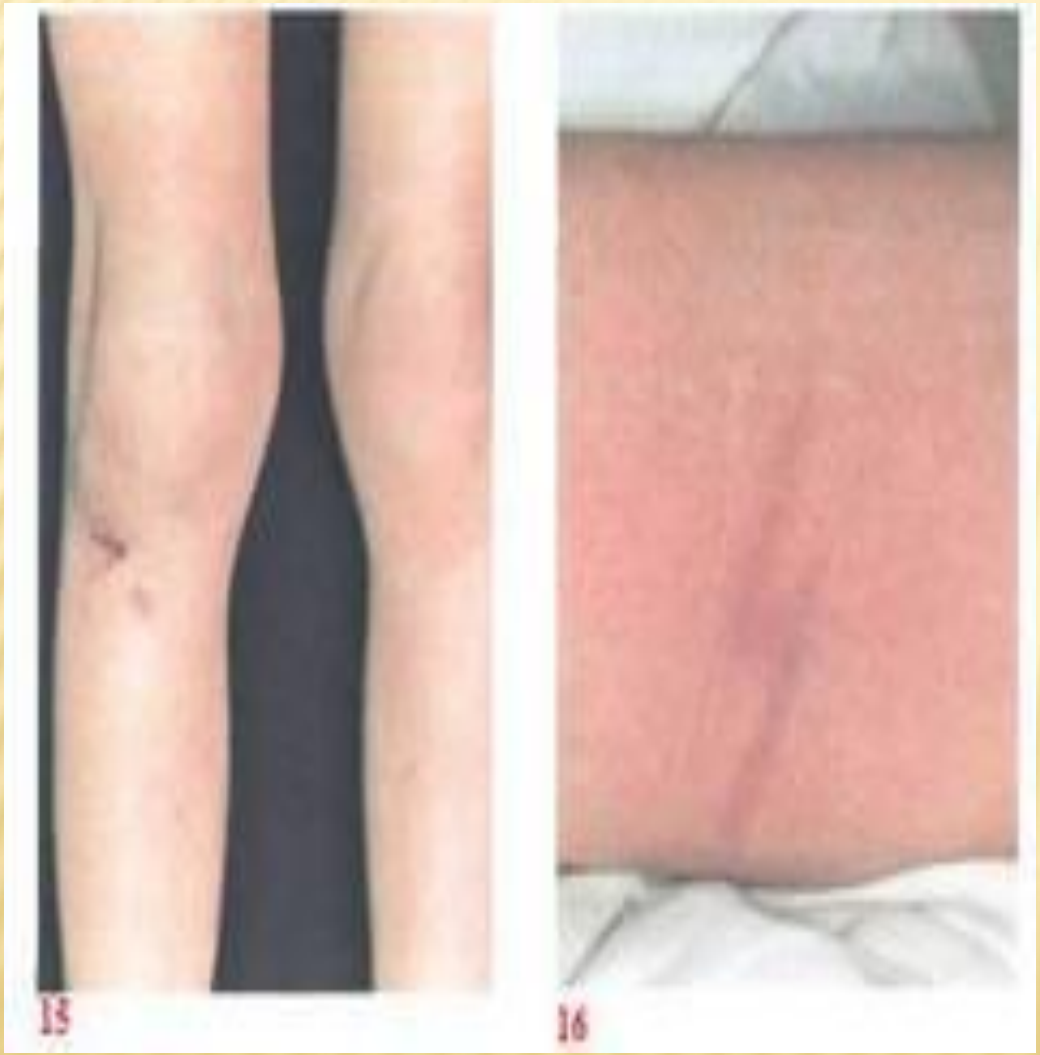


CEPHALOHEMATOMA

ACROCIANOSIS

MENINGOCOCCEMIA

SCARLET FEVER



MUMPS

HEMMORAGIC VASCULITIS

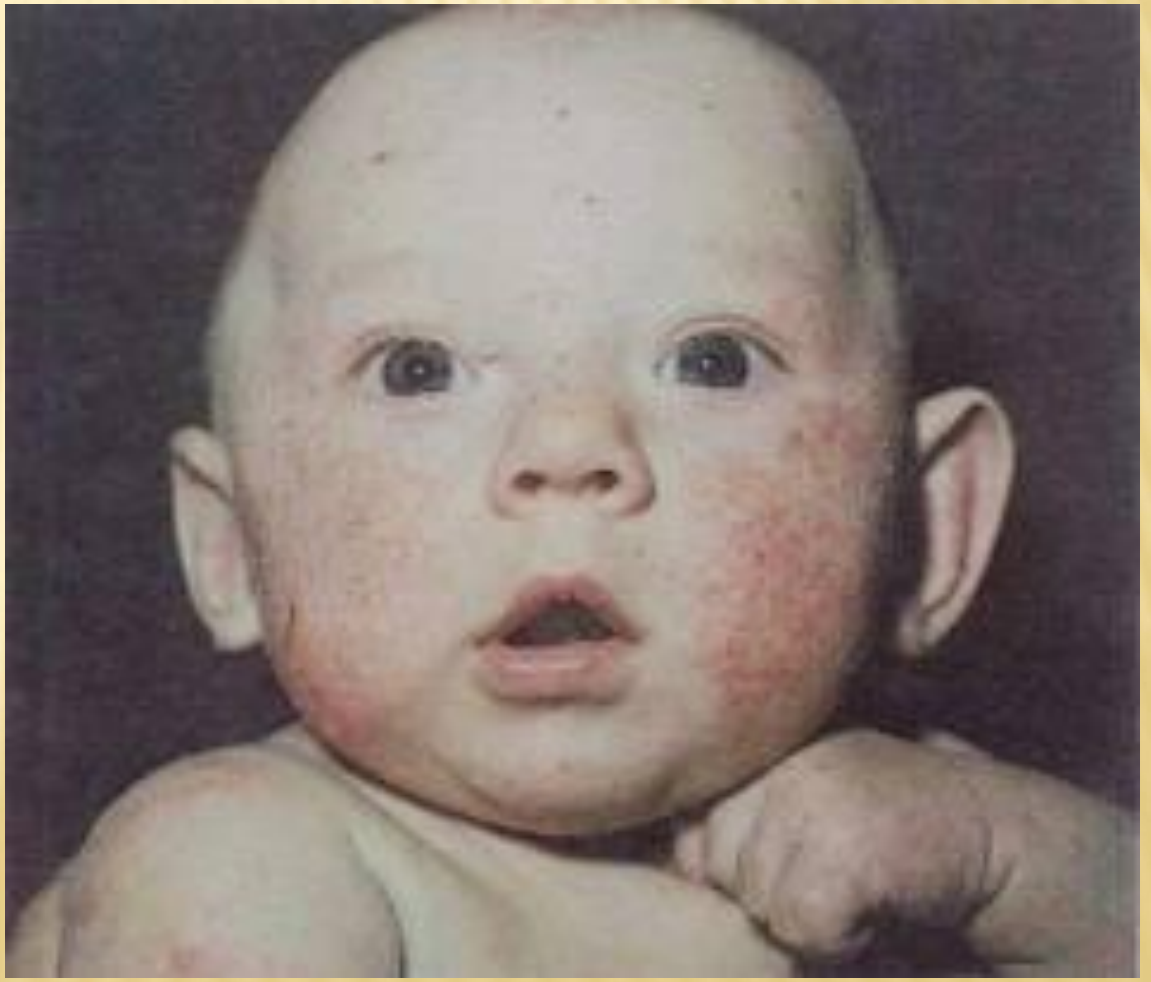
MISELS

ALERGO - DERMATITIS

PSORIASIS

CHICKEN POX

ATOPIC DERMATITIS IN AN INFANT



HYPOTROPHY OF THE III STAGE

OBESITY

Thank you for your attention!

LITERATURE, WAS USED IN THE LECTURE

- 1.Nelson Textbook of Pediatrics: 21th edition / Klegman S, Geme ST, Tasker W, 2021. – 1078 p. 2. Основи педіатрії за Нельсоном: переклад 8-го англ. видання : у 2 томах. Том 1 / Карен Дж. Маркданте, Роберт М. Клігман. – К.: ВСВ «Медицина», 2019. – XIV, 378 с. 2.Пропедевтична педіатрія : підручник для студентів вищих медичних навчальних закладів IV рівня акредитації / В. Г. Майданник [та ін.]. - 2-ге вид., випр. та допов. - Вінниця : Нова кн., 2018. - 871 с. : табл., іл. 3.Педіатрія : нац. підруч.: у 2 т. / Н.Г. Гойда, Р.О. Моісеєнко, Л.І. Чернишова, Ф.І. Лапій, В.В. Бережний та ін.; за ред. В.В. Бережного; Асоц. педіатрів України МОЗ України. - К. : [б. в.], 2013 -Т. 1. - 2013. - 1037 с. : табл., іл. 4.Педіатрія : підручник для студентів вищих медичних навчальних закладів IV рівня акредитації / О. В. Тяжка [та ін.] ; за ред. О. В. Тяжкої ; Нац. мед. ун-т ім. О. О. Богомольця МОЗ України. - 5-те вид., випр. та допов., оновлене. - Вінниця : Нова кн., 2018. - 1150 с. : табл., іл. 5.Педіатрія : національний підручник : у 2 т. / Д.Д. Іванов, С.В. Кушніренко, Д.А. Сеймівський [та ін.] ; за ред. В.В. Бережного; Асоціація педіатрів України. – К. : Сторожук О.В., 2013. – Т. 2. – 1021 с. 6. Extracorporeal Life Support Organization (ELSO). ELSO Guidelines for Neonatal Respiratory Failure Supplement to the ELSO General Guidelines. 2018 Dec [cited 2018 Jun 22]; 16. Snoek KG, Reiss IKM, Greenough A, Capolupo I, Urlesberger B, Wessel L, et al. Standardized Postnatal Management of Infants with Congenital Diaphragmatic Hernia in Europe: The CDH EURO Consortium Consensus - 2015 Update. Neonatology. 2016;110(1):66–74.
- Інтернет – ресурси:
- Сайти МОЗ України: https://moz.gov.ua/protokoli Онлайн-платформа з протоколами на засадах доказової медицини Джерела клінічних настанов Інформаційні ресурси http://www.booksmed.com/pediatriya http://pediatriya.info http://health-ua.com/parts/pediatrics http://www.med-edu.ru/pediatr http://medi.ru/Doc/j01.htm http://www.mif-ua.com/archive/zhurnal-zdoroverebenka/numbers http://medkniga.ucoz.net/publ/pediatrija/40 http://www.medport.info/index.php?option=com_content&view=section&id=48&Itemid=73 http://youalib.com/медицина/педіатрія