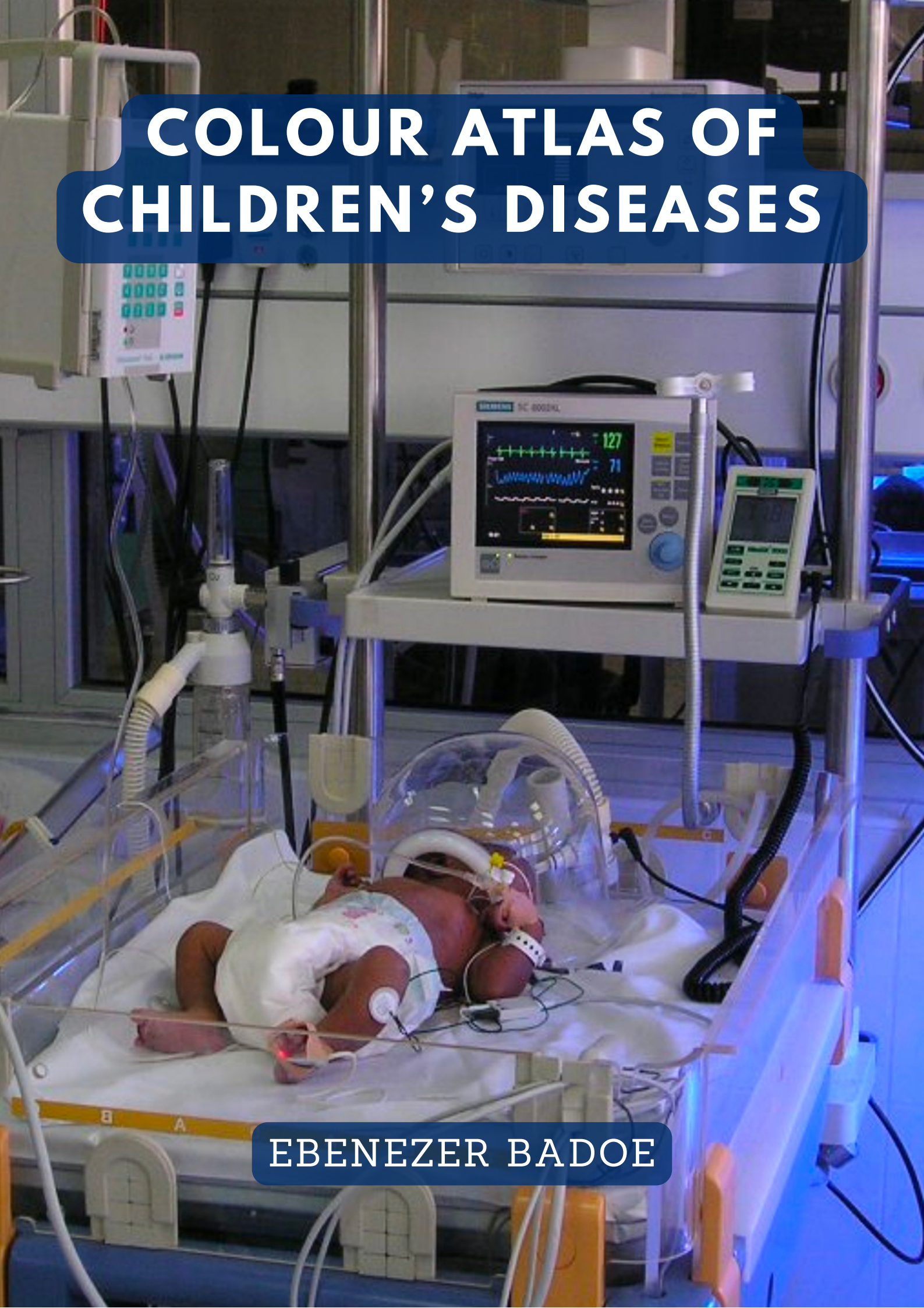


COLOUR ATLAS OF CHILDREN'S DISEASES

EBENEZER BADOE

COLOUR ATLAS OF CHILDREN'S DISEASES

Professor Ebenezer Badoe

MBChB (Ghana) MRCP(UK) FGCP FRCPCH DCH (Ion)

Department of Child Health

University of Ghana Medical School

COLOUR ATLAS OF CHILDREN'S DISEASES

A distillation of clinical experience starting off as "what you should know" about a disease condition and then differential diagnosis for a disease state. It is written in a straightforward, easy-to-digest format. It covers virtually every clinical condition a student is likely to meet during training and subsequent years. The Atlas is targeted at medical students and early trainees in the field of Paediatrics who wish to improve their knowledge in the shortest possible time. Nurses and other allied Health Professionals may find the atlas useful as they try to understand the varied cases that may present to them on the wards. It is recommended that standard textbooks in Paediatrics are consulted for more information on the images shown.

This electronic textbook was developed through funding from the University of Ghana Building Stronger Universities Programme III, Office of Research, Innovation and Development, University of Ghana, Legon, Accra Ghana.

Copyright ©2023 Ebenezer Badoe

All rights reserved. No part of this publication may be reproduced transmitted or stored in a retrieval system, in any form or by any means without permission of the author.

Publisher

Office of Research, Innovation and Development,
University of Ghana, Legon, Accra Ghana.
Under the auspices of the University of Ghana Building Stronger Universities Programme III
Contact: Prof. Richard Boateng. Email: richboateng@ug.edu.gh

Cover Design and Typeset:
Prof. Richard Boateng
Email: richboateng@ug.edu.gh

Printed by:
University of Ghana

Author Contact:
Prof. Ebenezer Badoe, University of Ghana
Email: evbadoe@ug.edu.gh

Ghana Library Cataloguing-in-Publication Data

Badoe, Ebenezer
Colour atlas of children/ Ebenezer Badoe – Accra: Research, Innovation and Development, 2023. 1. Child Health 2. Medical Sciences
I. Title
DDC 618.92 - - dc 20
ISBN: 978-9988-3-5933-1

Preface

The idea of an atlas of Children's Diseases was borne out of an apt description in a personal conversation with the late Professor Samuel Annobil that the department was a "museum" and " no where in the world would you see such cases". It then dawned on me to arm myself with a digital camera and start documenting cases.

The real motivation and further inspiration came from the actual cases I began seeing. There were unusual presentations of common diseases as well as rare diseases that had not been previously published in our literature. Students in West Africa use textbooks mainly written abroad and textbook descriptions do not frequently match what is seen at our wards and clinics. Rapid visual identification is important in paediatric training as a host of diagnoses can be made on the spot. With reduced exposure time of students on the wards, trainees struggle to diagnose common conditions.

My aim is to produce doctors who are workforce ready and can handle the period of Housemanship and further training in the field of paediatrics with ease. An emerging area like child protection is captured. The atlas would be an effective teaching tool for lecturers too and it is recommended they become familiar with its contents.

AUDIENCE: The Atlas is targeted at medical students and early trainees in the field of Paediatrics who wish to improve their knowledge in the shortest possible time. Nurses and other allied Health Professionals may find the atlas useful as they try to understand the varied cases that may present to them on the wards.

HOW TO USE THE E-BOOK: The atlas is presented as an e-atlas and the information being sought would ordinarily be under the relevant chapters listed in the book. A computer or a mobile device will be required to access the material.

Acknowledgements

The majority of the pictures have been taken by Prof. E. Badoe. However, I would like to thank the following for their photographic contribution. Dr. J. Ameyaw, Department of Child Health, Kwame Nkrumah University of Science and Technology Medical School, gladly gave me a significant collection to create this atlas. Dr. Glover Addy, Dr. Etwire, and Dr. W. Appeadu-Mensah, all of the Department of Pediatric Surgery, Korle Bu Teaching Hospital, offered classic surgical pictures for the atlas.

Photographic contributions also came from Prof. L. Renner (Oncology), Prof. M. Lartey (Dermatology), Prof. Onike Rodrigues, Dr. V. Adabayeri (Renal), Prof. Y. Tettey (who gave permission to photograph some specimens from the W. Laing Museum, Korle Bu Teaching Hospital), and the wonderful old black and white pictures taken in the Department of Child Health archives by Dr. A. Boohene, Prof. F. Nkrumah, Dr. Cardiocos, Mr. Arbenser, and Prof. Y. Asirifi.

Special thanks to Dr. Ella Amoako, Cape Coast Teaching Hospital, who got this project started. Mr. Maurice Lomo of the IT department, College of Health Sciences, sat by me patiently for weeks to guide the atlas creation.

Finally, thanks to the residents in the Department of Child Health who called me whenever there was an interesting case. Their enthusiasm was wonderful, and some may have donated pictures too that may never have been acknowledged.

Foreword

This wonderful color atlas, developed from the walls of the Children's Department at Korle Bu Teaching Hospital, is already a great asset to all doctors who care for children worldwide, including the sub-region in West Africa.

Professor Ebenezer Badoe proposed the idea of a local picture Atlas in a personal conversation I had with him one Christmas Eve several years ago when I was the Head of the Department. He seemed very excited about the prospect of capturing a lot of interesting cases that would benefit medical student training if formally documented in a comprehensive framework spanning all areas of pediatric training. He had already made a promising start by documenting images of many unusual cases that had not been previously seen in the department. He had my full support, and today, after several years of hard work and some frustrating periods on the project, I am pleased to write this foreword for this significant collection of images that will educate both students in training and established doctors caring for children.

This remarkable piece of work, the first of its kind from the University of Ghana Medical School and Korle Bu Teaching Hospital, comprises 13 chapters that primarily cover various systems of the body, along with chapters on Pediatric Surgery, Child Abuse, and Genetics. The pictures depict various conditions, both common and uncommon, that have been encountered in the Department of Child Health over the past two decades.

I myself was amazed by the extensive coverage of the atlas in notable areas such as child abuse, neurology, dermatology, and pediatric surgery, making it a comprehensive resource for all. The pictures are also of superb quality. As a teaching and learning tool for our students, this atlas will enable them to better appreciate some of the less common conditions and refresh their understanding of the important aspects of common conditions in child health. The author presents a picture of a condition and highlights its significant features. Below the description, there is a brief paragraph outlining what the student should know, including associations, complications, and differential diagnoses. This unique

tool will undoubtedly leave a lasting impression on the students' minds during their learning journey, particularly regarding conditions that they may not have encountered during their dynamic rotations, which involved a rapid turnover of patients.

In a post-Covid era, where patient contact has significantly reduced, and there is a tendency to shorten rotations in medical training worldwide, this atlas has arrived at the right time to fill that gap. As a former Head of Department and Dean of the University of Ghana Medical School, I consider this development in medical training a significant milestone. Being the first electronic atlas of its kind, it gives me great pleasure to introduce this outstanding atlas to the world.

Professor Jennifer E. Welbeck

MBCHB(Ghana) FRCP(Canada) FWACP FGCP

Contents

PREFACE I

ACKNOWLEDGEMENTS II

FOREWORD III

CONTENTS 1

NEONATOLOGY 4

ENDOCRINE DISORDERS 38

DERMATOLOGY 49

CHILD PROTECTION 91

NEUROLOGY 106

GASTROENTEROLOGY / NUTRITION 136

OPHTHALMOLOGY 166

GENETICS 179

INFECTIOUS DISEASES IN CHILDREN 199

PAEDIATRIC SURGERY 230

RHEUMATOLOGY AND MUSCULO-SKELETAL DISORDERS 244

ONCOLOGY 248

HAEMATOLOGY 259

CARDIOLOGY 270

RESPIRATORY DISORDERS IN CHILDREN 282

RENAL DISORDERS IN CHILDREN 298

BIBLIOGRAPHY AND FURTHER READING 311

PROFILE OF AUTHOR 312

KORLE-BU TEACHING HOSPITAL



Department of Child Health,

Korle-Bu Teaching Hospital



NEONATOLOGY



Fig.1 Prematurity: 650g premature infant born at 26 weeks gestation, pictured with a nasogastric tube in situ. The baby is obviously small, with little subcutaneous fat and a head relatively bigger than the body.

What you should know. Live-born infants delivered 37 weeks from the first of the last menstrual period are termed premature by the world health organization. Prematurity is associated with increased morbidity and mortality. Early problems within the 1st 72hours include respiratory distress syndrome (RDS), hypoxia, apnea, jaundice, sepsis, hypoglycemia, hypothermia, electrolyte imbalance, patent ductus arteriosus, functional ileus and periventricular bleeds, Later problems include sepsis and necrotizing enterocolitis, jaundice, bronchopulmonary dysplasia, retinopathy of prematurity, anaemia of prematurity (iaotrogenic, nutritional, folic acid deficiency), and learning difficulties.

Differential diagnosis: Not all low-birth-weight infants are premature. Infants with intrauterine growth restriction also have low birth weights. They however do not show signs of immature organ development.



Fig. 2 Extremely premature baby undergoing mechanical ventilation.

What you should know: tiny babies require support for their respiration. Very premature babies develop respiratory distress syndrome. Elective intubation is usually done below 1000 g and when there is clinical failure to establish effective ventilation like the onset of apneas, irregular or exhausted respiration. Pneumothorax in such neonates is an ever-present complication of mechanical ventilation as well as laryngeal stenosis and bronchopulmonary dysplasia



Fig. 3 A modern neonatal intensive care unit at a tertiary hospital. Korle Bu Teaching Hospital. Note the headbox from which the neonate receives enriched oxygen to help with respiration.



Fig. 4 Cup feeding in a premature infant

What you should know: Cup feeding is initiated when the infant is not mature to suck on his or her own at the breast. A typical scene at any neonatal unit, milk is pumped out by the mother (breast milk) or its formula milk.



Fig. 5 Breastfeeding: The picture illustrates a good breastfeeding technique (good latch). Baby's mouth is opened wide with lips flanged out, high position on mother's areola, the angle between the baby's two lips should be close to 180 degrees and baby's chin is pressed to the breast. Also, note that the mother has adequate breast support.

What you should know. Breastfeeding should be initiated in the first 30 minutes of life. Successful breastfeeding depends on the mother and infant being relaxed. A key factor in the success of breastfeeding is an appropriate latch.

UNICEF's ten steps to successful breastfeeding can be accessed on the following website https://www.unicef.org/newsline/tenstps.htm



Fig. 6 Post-term infant; Characteristic desquamation (peeling skin) seen in a post-term infant.

What you should know. Post-term infants are those born after 42 weeks gestation from the maternal last menstrual period, regardless of weight at birth. The aetiology is still unknown. Risks to the baby include reduced placenta perfusion, meconium aspiration and oligohydramnios. Other signs include long nails, loose skin, especially around the thigh and buttocks, meconium-stained nails, skin and umbilical cord.



Fig. 7 Vaginal discharge; Creamy, thick discharge seen from the vagina of this two-day old.

What you should know. This is a benign condition, self-limiting and is due to the withdrawal of maternal oestrogen. This may be noted intermittently, during the first few days of life, may be associated with vaginal bleeds or spotting. It requires no treatment and usually subsides after a few weeks. Reassurance is key.



Fig. 8 Reddish urine in diaper; Mother noticed reddish urine in baby's diaper on day 5 of life and reported to the doctor.

What you should know. It is not uncommon to find reddish brown or rust coloured urine in baby's diapers. Parents usually mistake this for blood and come in quite anxious. These are urate crystals present in the urine. Commonly seen in breastfed infants. No treatment is required, encourage more breastfeeding and reassure mother.



Fig. 9 Café au lait macule; Note a uniformly dark brown (hyperpigmented) lesion with smooth borders over baby's right breast.

What you should know. One to three café au lait spots are common in normal children.

Differential diagnosis. Six or more café au lait spots are usually seen in neurofibromatosis.

Large, asymmetrical café au lait spots with irregulars borders are seen in McCune–Albright syndrome and is associated with precocious puberty.



Fig. 10 Mongolian spot; Multiple Mongolian spots seen in a two-week-old neonate. Several, poorly defined pigmented spots noted on the back of this neonate.

What you should know. Relatively common in African children, usually fade with time.

Requires no treatment.

Differential diagnosis. May resemble bruising in non-accidental injury.



Fig. 11 Accessory nipple Accessory nipple is seen here in a neonate.

What you should know. Also known as supernumerary nipples, usually occurs on the mammary line. This condition is benign and requires no treatment. Can be removed later in life, for cosmetic reasons.

Differential diagnosis. Often mistaken for a freckle, mole or dimple.



Fig. 12 Giant congenital pigmented Naevus Neonate pictured with a big hyperpigmented lesion seen over the posterior trunk and buttocks.

What you should know. Also known as congenital melanocytic naevus. May develop malignant melanoma in later life hence early removal is indicated. Can sometimes be hairy. MRI scan of the head is indicated if the naevus is situated over head and spine. Follow-up is required.

.



Fig. 13



Fig. 14



Fig. 15

Figure 13 Meconium; early stool of neonates, usually very dark , sticky and odourless.
Figure 14 Normal stool of a breastfed infant; yellow, soft and mild smelly stools
Figure 15 Pale stool; characteristic pale or chalk like stool from a neonate with biliary atresia.

What you should know. Over 95% percent of neonates pass meconium within 48 hours of life. Delayed passage of meconium may be due to congenital hypothyroidism, maternal exposure to opioids during labour, presence of a meconium pug and Hirschsprung's disease.

Normal stools of a breastfed infant is yellow and can be pasty to watery. Breastfed infants should have at least six stools per day by the third to fifth day of life. Most infants pass stool after every feed.

Pale stools are characteristic of biliary atresia, due to lack of bile pigment in stool.



Fig. 16 Forceps Marks Scars left on a neonate after a forceps application during delivery.

What you should know. Mode of delivery is important to determining apparent facial bruises to a neonate.



Fig. 17 Subgaleal Bleed Edematous swelling, subcutaneous hematoma seen around the posterior auricular area down to the neck. The baby also has eye shades on, as she is receiving phototherapy.

What you should know. Subgaleal haemotoma occurs between the skull periosteum and the epicranial aponeurosis. It usually crosses suture lines and may spread to scalp. Neonates may be anaemic and present later with jaundice from red blood cell breakdown.

Differential diagnosis; Cephalhematoma and Caput Succedanum.



Fig. 18 Natal tooth Neonate on day three of life seen with the tooth.

What you should know. Natal teeth are rare. When they occur at birth, they are called natal teeth and if they erupt within the first thirty days of life thy are termed neonatal teeth.

They are usually left in arch, except they are highly mobile (risk of aspiration) or interfere with feeding.

Can occur as an isolated finding or may be associated with some syndromes.

.



Fig. 19 Cephalhematoma Large boggy scalp swelling over the left parietal area with clear edges.

What you should know. Cephalhematoma is limited to a single cranial bone in contrast to caput succedaneum. It is caused by sub periosteal haemorrhage and appears a few hours after birth. It may sometimes be bilateral. This swelling gradually hardens (sometimes with calcification) and leaves a relatively soft center. It resolves over a few months. Management is conservative and aspiration is **NOT** recommended as it increases risk of infection. Skull X-Ray or head CT scan is done if neurological symptoms appear, or a skull fracture is suspected. Jaundice is the commonest neonatal complication. Anaemia or hypotension can also occur.

Differential diagnosis; Subgaleal haemorrhage and Caput succedaneum. Rarely, an encephalocoele may present in a similar area. These tend to pulsate.



Fig. 20 Subconjunctival Haemorrhage. Note the bright red discolouration underneath the bulbar conjunctiva.

What you should know. This is seen after the stress of delivery in some neonates. It is the collection of blood underneath the conjunctiva from rupture of capillaries. Resolves spontaneously.



Fig. 21 Erb's Palsy. Characteristic posture of arm adducted and internally rotated and wrist drop .

What you should know. Caused by peripheral nerve damage; C5 and C6 in the brachial plexus. It may occur due to shoulder dystocia from vaginal delivery; may also occur during breech delivery. In Erb's palsy. There is loss of abduction and external rotation of shoulder, pronation of elbow and wrist drop. Spontaneous recovering occurs in most patients. Early recovery suggests a better long-term prognosis. Nerve grafting may be required if there is non recovery.

Differential Diagnosis. Klumpke Palsy involving C7 and T1 with a characteristic claw hand deformity.



Fig. 22 Ambiguous genitalia Obvious clitoral hypertrophy with prominent labioscrotal folds, making it difficult to distinguish gender.

What you should know. Enquire about parental consanguinity, symptoms of virilization in the mother, drugs during pregnancy, familial hirsutism and unexplained infant deaths. The commonest cause of ambiguous genitalia is congenital adrenal hypertrophy. They would commonly present with salt wasting crisis (vomiting, unexplained shock, metabolic acidosis, electrolyte imbalance typically hyperkalemia and hyponatremia.). Physical examination should include looking for palpable gonads in inguinal or labia area.

A decision about sex of the child should be taken after establishing a diagnosis and weighing the long term consequences.



Fig. 23a) and 23(b) Amniotic bands; Whilst figure 20(a) shows amputation of the digits, figure 20(b) shows a constricting ring of the lower limb.

What you should know. It is also known as amniotic band disruption complex, these bands are caused by small strands of amnion around the developing structure. They may cause amputation, constriction or craniofacial disruption.



Fig. 24 Milia. Whitish yellow papules are seen on and around the nose of a neonate.

What you should know. Milia are tiny superficial inclusion cysts which contain keratin. It is caused by blockade of pilosebaceous gland of the newborn. Usually found over the nose, nasolabial fold and cheek. Occurs in 40% of all newborns. It is self limiting.



Fig. 25 (a&b) Infant of a Diabetic mother (Macrosomia) Baby weighed 4.8kg at birth and also had hairy ears.

What you should know. Known as large for gestational age infant. Infant of diabetic mothers are macrosomic, have round facies and hairy ears. Tests for hypoglycemia must always be done in large for gestational age infants. Birth trauma is common in such deliveries. Infants may also present with polycythemia or respiratory distress

Differential diagnosis. Infants with Soto's syndrome (macrosomia, big head, large hands and feet) or Beckwith Weidemann (macrosomia, large tongue, omphacoele, horizontal earlobe crease and persistent hypoglycemia) may present as such.



Fig. 26 Myelomeningocele. A closed lumbosacral myelomeningocele pictured in a day-old neonate. Note the patulous anus.

What you should know. Midline defect over the spine which protrudes as a sac-like structure containing neural tissue and cerebrospinal fluid. There may be accompanying neurological signs in the lower limbs and bladder and bowel dysfunction. Hydrocephalus should be excluded.

Neural tube defects like these may be prevented by folic acid supplementation in early pregnancy and preconception.



Fig. 27 Hydrocephalus. 7-day old neonate with a hydrocephalus. The head is obviously big with a disproportionately large forehead. The baby also had widened fontanelle and sutures. Also note widened scalp veins. His head circumference was above the 97th percentile.

What you should know. Hydrocephalus is an increase in the volume of cerebrospinal fluid in the brain, particularly the ventricles. This can be due to excessive production, decreased absorption and obstruction of cerebrospinal fluid. Early infancy is characterized by accelerated head growth; more than 1cm per week in neonates, bulging fontanelle, prominent scalp veins, widened cranial sutures, sun-setting eyes, irritability, poor feeding and impaired development.

Treatment is surgical (venticuloperitoneal shunt). ***Ventriculoartrial shunts are now out of favour.***

Investigations include transfontanelle ultrasound, Head CT scan or MRI.

Differential Diagnosis. Chronic subdural hematoma, space occupying lesions or megaencephaly.

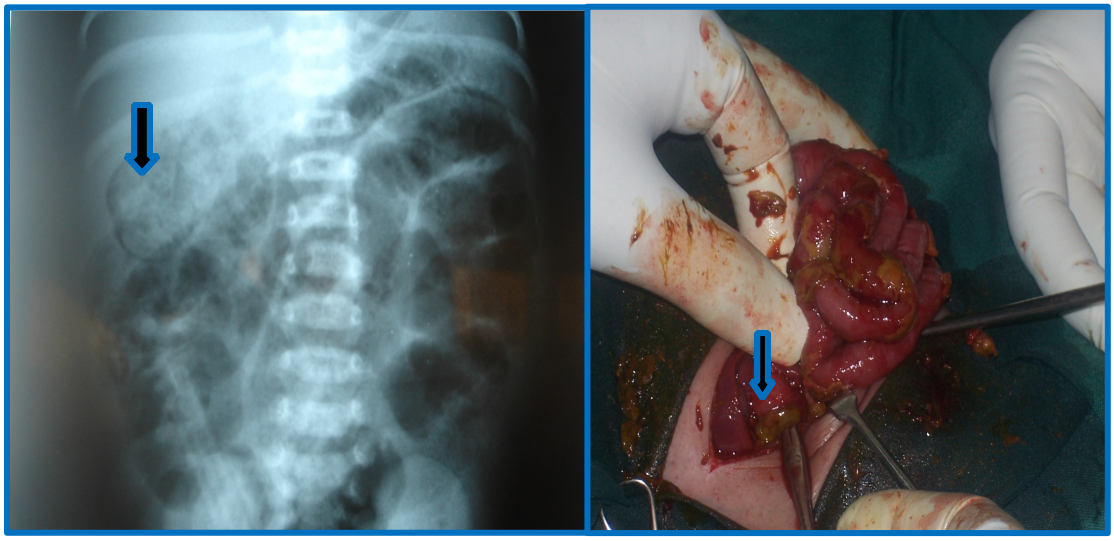


Fig. 28 a&b Necrotizing enterocolitis. X ray show gas in the portal venous system and intraluminal air (pneumatosis intestinalis) giving an appearance of a 'double gut wall shadow'. Neonate presented with bilious vomiting, abdominal distention, and blood in the faeces. She progressed to bowel perforation (fig 25b, showing bowel perforation seen at laparotomy). Bowel was resected.

What you should know. This is damage to the bowel wall following many causes including infection. Manifests as abdominal distension, rectal blood and intraluminal air on x-ray. More common in preterms and babies less than 1500g at birth. Onset is in the first few days with coagulation disorders, low platelet counts and a positive blood culture. Strictures and malabsorption are long-term complications. Note that breastmilk is protective.

Differential Diagnosis. Any other cause of intestinal obstruction should be ruled out.



Fig. 29 a&b Neonatal tetanus. Neonate with tetanus experiencing spasms. Pictures illustrate stiffening of the neck, back, abdomen and limbs. This is the spasmodic stage.

What you should know. Tetanus is caused by Clostridium Tetani; which is a gram positive anaerobic and spore forming bacilli. Maternal vaccination has greatly reduced incidence of neonatal tetanus, but sporadic case are seen. Risk factors include no maternal vaccination, use of unsterile instruments during delivery and application of contaminated foreign material to the cord (e.g. cow dung for cultural reasons).

There is difficulty in sucking and swallowing, irritability and stiff jaw. Spasms and stiffness develop and infants are in opisthotonus position.

Differential Diagnosis. Should be differentiated from infantile spasms.



Fig. 30 Umbilical granuloma

What you should know

In this baby the umbiical cord has failed to separate completely and there is a low grade infection around it resulting in a granuloma.

Treatment is with silver nitrate .

Differential diagnosis

Umbilical polyp, patent urachus, patent vitello-intestinal duct.



Fig. 31 osteogenesis imperfecta note the multiple fractures which have led to shortening of the extremities.

What you should know: in this condition there is abnormal fragility of bone. Infants are born with multiple fractures. there are several forms described

Differential diagnosis: non accidental injury



Fig. 32 Severe jaundice of the unconjugated type. Deep jaundice involving the palms and soles

What you should know: jaundice may be physiological and its seen in half-of term infants and 85% of premature. Breast milk jaundice also occurs in a small percentage of healthy term infants. Significant

Causes of jaundice in our environment include severe rhesus iso immunization, sepsis, ABO incompaitility, G6PD deficiency . Unconjugated bilirubin is fat soluble and when transported in serum it is bound to albumin which is safe. When the albumin binding capacity is exceeded the free fraction not bound to albumin may cross the blood brain barrier causing bilirubin encephalopathy (Kernicterus).



Fig. 33 Neonate undergoing phototherapy at the neonatal unit.

What you should know: phototherapy works by light energy isomerizing unconjugated bilirubin to a more water soluble product which passes through the liver rapidly. Phototherapy using the firefly equipment for instance has decreased the need for exchange transfusion. Complications of phototherapy include loose stools, rashes, overheating, bronze baby syndrome.



Fig. 34 Exchange transfusion

What you should know: this procedure is done for urgent reduction of unconjugated bilirubin levels, especially rhesus isoimminization or G6PD . Complications of exchange include vascular problems like air/blood clot emboli, thrombosis, cardiac failure or arrhythmias, hypoglycemia, hyperkalemia, or infections which could be bacterial or viral.



Fig. 35 Talipes equinovarus (club foot) a common congenital abnormality

What you should know: both feet show plantarflexion of the hindfoot (equinus) with inversion of the ankles and adduction of the forefoot. Affects more boys than girls. Most cases are idiopathic and some are secondary to neuromuscular disorders like a myelomeningocele. Fibroids may predispose to this condition as the foot has little room to manoeuvre in the womb.

ENDOCRINE DISORDERS

KINDLY CONTACT THE AUTHOR FOR A FULL COPY OF THIS E-BOOK

THE AUTHOR'S DETAILS ARE LOCATED AT THE COPYRIGHT PAGE

COLOUR ATLAS OF CHILDREN'S DISEASES

A distillation of clinical experience starting off as "what you should know" about a disease condition and then differential diagnosis for a disease state. It is written in a straightforward, easy-to-digest format. It covers virtually every clinical condition a student is likely to meet during training and subsequent years.

The Atlas is targeted at medical students and early trainees in the field of Paediatrics who wish to improve their knowledge in the shortest possible time. Nurses and other allied Health Professionals may find the atlas useful as they try to understand the varied cases that may present to them on the wards.

It is recommended that standard textbooks in paediatrics are consulted for more information on the images shown.

Prof. Ebenezer Badoe received his medical training at the University of Ghana Medical school, and after Houseman Positions at Korle Bu Teaching Hospital and a stint as a casualty officer, proceeded to the United Kingdom for postgraduate training. He held various positions in prestigious UK hospitals, including St Mary's Hospital in Carshalton, Surrey, Kings College Hospital, Bristol Royal Children's Hospital and Chelsea and Westminster Hospital in London. He returned to Ghana in 2002 and has been heading the Neurology/Developmental service ever since and the Child Protection service he founded at the Korle Bu Hospital. He has two decades of teaching experience and has published widely in neurology, genetics/dysmorphology and infections affecting the Central Nervous system.

Prof. Badoe is a member of the Royal College of Physicians (London) and a Fellow of the Royal College of Paediatrics and Child Health (UK), and a Fellow of the Ghana College of Physicians and Surgeons. He is a recipient of an award by UNICEF for his dedication to child protection services in Ghana. He is a former Head of the Department of Child Health and a former President of the Paediatric Society of Ghana.

ISBN to be Placed Here