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Maureen A Hickman
An Introduction to Midwifery



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to Midwifery

by

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BLACKWELL SCIENTIFIC PUBLICATIONS
OXFORD, LONDON, EDINBURGH, MELBOURNE

© 1978 Blackwell Scientific Publications
Osney Mead, Oxford OX2 0EL
8 John Street, London WC1N 2ES
9 Forrest Road, Edinburgh EH1 2QH
P.O. Box 9, North Balwyn, Victoria, Australia

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ISBN 0 632 00235 2

First published 1978

British Library Cataloguing in Publication Data

Hickman, Maureen A

An introduction to midwifery.

I. Obstetrics

I. Title

618.2 RG524

ISBN 0-632-00235-2

Distributed in the U.S.A. by
J.B. Lippincott Company, Philadelphia
and in Canada by
J.B. Lippincott Company of Canada Ltd., Toronto

Set in Monotype Bembo

Printed in Great Britain by
Billing & Sons Ltd,
Guildford, London and Worcester
Bound by Kemp Hall Bindery, Oxford

AN
INTRODUCTION
TO MIDWIFERY

Preface

The aim of this book is to provide student midwives, undertaking the single period midwifery training, with a comprehensive textbook arranged in a logical sequence.

The book is arranged in four sections. The first section deals with the normal aspects of midwifery. The second section covers abnormal midwifery, the third deals with the fetus and neonate and the fourth the health and social services. Sections I and III could also be used by nurses during an eight or twelve-week obstetric secondment.

Where applicable, suggestions for further reading have been made at the end of the chapters, and appendices for easy reference have been included.

I am grateful to Dr F.E. Hytten, Dr C.D. Peters, Miss M.J. Day, Miss D.J. Davis and Miss R. Aikens for constructive criticism, and to my many teachers and colleagues who have indirectly contributed to this book. I should like to express my thanks to Mrs R. White for typing the manuscript and to the publishers for their help and patience.

November, 1977

Maureen A. Hickman

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Introduction

Students coming to midwifery for the first time are faced with a host of new terms, which, whilst not exclusive to the subject, may not have been encountered before. I have incorporated the following lists of definitions, prefixes and abbreviations at the beginning of this book to remind the reader that it is important to understand the language of a subject in order to appreciate its meaning.

Basic terminology

This list is intended to deal only with very general terms. An explanation of the many other terms used will be given as they present in the text.

Gestation. Pregnancy.

Trimester. Three months.

Gravid. Pregnant.

Gravida (pl. ae). A term applied to a woman who is pregnant.

Primigravida (pl. ae). A woman who is pregnant for the first time.

Multigravida (pl. ae). Pregnant not for the first time.

Parous. Having borne one or more than one viable child.

Nullipara. A woman who has never borne a child.

Primipara (adj. ous). A woman who has borne one viable child.

Multipara (adj. ous). A woman who has borne more than one viable child.

Grand multipara. A woman who has five or more children.

Natal. Birth.

Antenatal. Before birth.

Prenatal. Before birth.

Postnatal. After birth.

Parturition. The birth process.

Antepartum. Before birth.

Postpartum. After birth.

Embryo. A term used to describe the fetus during its developmental phase.

Fetus. An unborn child.

Perinatal. Around birth.

Neonatal. Newborn.

Neonate. The baby during first month of life.

Infant. A child during the first year of life.

Cephalic. Pertaining to the head.

Vertex. That part of the fetal head between the anterior and posterior fontanelles and the two parietal eminences.

Zygote. Fertilised ovum produced by fusion of ovum and spermatozoon.

Prefixes used in obstetrics

An understanding of many words used in obstetric practice can be achieved if you learn the meaning of a few basic prefixes. Set out below are prefixes, their meaning and an example of their use in obstetric practice.

Ante (before). Antenatal; period before birth.

Auto (self). Autolysis; self-digestion.

Bi(s) (having two, twice). Bimanual examination; using two hands.

Dys (difficult). Dystocia; abnormal uterine action.

Endo (within, lining). Endometrium; lining of the uterus.

Eu (well). Eutocia; normal uterine action.

Ex (out of, without). Extrauterine pregnancy; pregnancy outside the uterus.

Haem (blood). Haematoma; a collection of blood.

Hetero (different). Heterozygote (ous); an individual who has inherited contrasting members of a pair, or series, of genes.

Homo (same). Homozygote(ous); an individual who has inherited similar members of a pair, or series, of genes.

Hydro (to do with water). Hydrocephaly; a condition resulting from the accumulation of cerebrospinal fluid within the skull.

Hyper (over, above). Hypertonic uterine action; excessive uterine contractions.

Hypo (under, below). Hypotonic uterine action; weak uterine contractions.

Inter (between). Intertuberous; a pelvic diameter measured between the ischial tuberosities.

Intra (within). Intrapartum; during labour.

Mal (bad). Malpresentation; abnormal presentation.

Mega (great). Megaloblast; a primitive red blood cell.

Micro (small). Microcephaly; small head.

Mono (one, single). Monozygotic; arising from one zygote.

Neo (new). Neonatal; newborn, baby within one month of birth.

Oligo (little, less than normal). Oligohydramnios; a deficiency in the amount of amniotic fluid.

Para (alongside). Parametrium; pelvic connective tissue at the side of the uterus.

Peri (roundabout). Perinatal mortality; stillbirths and deaths in the first week of life.

Poly (much, many). Polyhydramnios; excessive amount of amniotic fluid.

Post (after). Postpartum; after birth.

Pre (before). Prenatal; before birth.

Retro (behind, backwards). Retroplacental; behind placenta. Retroverted (uterus); the uterus that is tilted backwards.

Tri (three). Trimester; three equal periods of pregnancy.

Ultra (lying beyond). Ultrasound; beyond range of human hearing.

Uni (one). Uniovular; from one ovum.

Abbreviations

The use of abbreviations leads to confusion and sometimes error. This list is included, not to encourage their use, but to help the newcomer to unravel the confusion their usage may create.

AF; artificially fed.

AN, ANC; antenatal, antenatal clinic.

APH; antepartum haemorrhage.

ARM; artificial rupture of membranes.

BBA; born before arrival.

BF; breast fed.

Br; breech.

C; Celsius.

cm; centimeter.

CMB; Central Midwives Board.

Cx; cervix.

DTA; deep transverse arrest.

DVT; deep vein thrombosis.

ECV; external cephalic version.

EDD(C); expected date of delivery/confinement.

Eng; engaged.

F; Fahrenheit.

FD; forceps delivery.

FH (H); fetal heart (heard).

FSH; follicle stimulating hormone.

g; gram.

Hb; haemoglobin.

HCG; human chorionic gonadotrophin.

HDN; haemolytic disease of the newborn.

HPL; human placental lactogen.

- HVS; high vaginal swab.
K; menarche.
kg; kilogram.
LBW; low birth weight (baby).
LFD; light-for-dates (baby).
LH; luteinising hormone.
LMP; last menstrual period.
LMA (L) (P); left mentoanterior (lateral) (posterior).
LOA (L) (P); left occipitoanterior (lateral) (posterior).
LSA (L) (P); left sacroanterior (lateral) (posterior).
m; metre.
ml; millilitre.
MV; mentovertical (diameter).
ND; normal delivery.
NND; neonatal death.
OA; occipitoanterior.
OF; occipitofrontal (diameter).
OFS; obstetric flying squad (the emergency obstetric unit).
OP; occipitoposterior.
 PCO_2 ; symbol for carbon dioxide pressure.
 PO_2 ; symbol for oxygen pressure.
PE; pre-eclampsia or pulmonary embolism.
pH; a symbol used to denote the hydrogen ion concentration, and hence the degree of acidity or alkalinity of a solution.
PN (C); postnatal (clinic).
PNM; perinatal mortality.
POP; persistent occipitoposterior (position).
PPH; postpartum haemorrhage.
PV; *per vaginam*.
RCM; Royal College of Midwives.
Rh; Rhesus.
RMA (L) (P); right mentoanterior or (lateral) (posterior).
ROA (L) (P); right occipitoanterior (lateral) (posterior).
RSA (L) (P); right sacroanterior (lateral) (posterior).
SB; stillbirth.
SCBU; Special Care Baby Unit.
SFD; small-for-dates (fetus).
SOB; suboccipitobregmatic (diameter).
SOF; suboccipitofrontal (diameter).
SMB; submentobregmatic (diameter).
SVD; spontaneous vaginal delivery.

TOL; trial of labour.

VE; vaginal examination or vacuum extraction.

VD; venereal disease(s).

Vx; vertex.

Definitions

Included under this heading are definitions of words used that it would be inappropriate to define as part of the text. But an understanding of them may lead the student to a better knowledge of the subject as a whole. Other more important words are defined as used, and are included in the index for reference.

Adnexa. Appendages; Adnexa uteri—ovaries and Fallopian tubes.

Agglutinin. A substance in the blood causing agglutination.

Aldosterone. A hormone secreted by the adrenal cortex.

Anabolism. Constructive metabolism, building up of body tissue.

Antibody. A protein appearing in the blood and body fluids in response to the stimulus of an antigen.

Antigen. Any substance which when introduced into the blood or tissues is capable of stimulating formation of antibody.

Asynclitism. Engagement of the fetal head with the sagittal suture anterior or posterior to the transverse diameter of the pelvic brim.

Atelectasis. The condition of incomplete expansion of the lungs.

Atresia. Absence or closure of a natural passage, e.g. anus or oesophagus.

Autosome. Any chromosome except a sex chromosome.

Bacteraemia. The presence of bacteria in the bloodstream.

Bacteriuria. The presence of bacteria in the urine.

Bilirubin. A pigment found in bile; a breakdown product of haemoglobin.

Biology. The science dealing with the phenomena of life.

Catabolism. Destructive metabolism; breaking down of body tissue.

Caucasian. Person of European origin.

Chromosome. One of a number of structures contained in the cell nucleus and bearing the genes.

Congenital. Pertaining to a trait or quality present at birth.

Cytology. The science of the structure of cells.

Diastole. The moment in the heart cycle when the heart is in a state of relaxation. It occurs after atrial and ventricular systole.

Enzyme. A complex protein formed in the living cell, but able to act independently of the cell.

Endogenous. Growing from within.

Exogenous. Growing from outside.

Fibrin. An insoluble protein resulting from the interaction of fibrinogen with thrombin during the clotting of blood.

Gammaglobulin. The fraction of the blood globulin containing immune bodies.

Gene. The unit of inheritance occupying a specific site of a chromosome.

Genetics. The study of heredity.

Genotype. Classification of an individual according to the genes he has inherited.

Globin. A type of protein present in tissues.

Haemolysis. Destruction of red blood cells.

Heredity. The characteristics received by an individual at the fusion of ovum and spermatozoon.

Heterozygous. An individual who has inherited contrasting members of a pair, or series of genes.

Homozygous. An individual who has inherited similar members of a pair, or series of genes.

Hormone. A substance having a definite chemical composition, secreted in the cells of a gland and discharged directly into the bloodstream.

Hydraemia. Excess of water in the blood.

Hyperchromia. Abnormal increase in the colour of the cell due to an increase in the haemoglobin of the red blood cells.

Hypochromia. Decrease in the colour of the cell due to a decrease in the normal content of haemoglobin in the red blood cells.

Hyperplasia. An abnormal increase in the number of normal cells in a tissue.

Hypertrophy. Increase in size of an organ or structure.

Iatrogenic. Induced by effects of treatment.

Idiopathic. A disease of unknown origin.

Immune. Protected against a particular disease, either naturally, or by means of immunisation.

Immunoglobulin; see gammaglobulin.

Isoimmunisation. Immunisation by an antigen.

Isotonic. Having the same tone or tension.

Isometric. Having equal length.

Karyotype. A set of chromosomes.

Lysis. Chemical destruction of cells.

Meiosis. Reduction of the number of chromosomes in a germ cell by means of two consecutive nuclear divisions during maturation.

Mitosis. Cell division during which the chromosomes split longitudinally and are distributed in equal numbers to resultant cells.

Molecule. A unit particle of a substance.

Morbidity. The condition of suffering from a disease.

Mutation. A change in a gene or chromosome capable of producing a modification which can be inherited.

Necrosis. Death of tissue.

Non-Caucasian. Person of non-European origin.

Occult. Concealed, hidden.

Oedema. An excessive accumulation of fluid in the tissue spaces.

Osmosis. The passage of a solvent through a semi-permeable membrane separating solutions of different concentrations.

Physiology. The science of function in living organisms.

Plasma. The fluid part of the blood in which the cellular elements are suspended.

Promontory. A process jutting out from a part of the body.

Racemose. Resembling a bunch of grapes.

Ratio. A numerical expression of the quantitative relationship between different factors or elements.

Reticulocyte. An immature red blood cell.

Systole. The moment in the heart cycle when both ventricles are in a state of contraction and blood is injected into the pulmonary artery and aorta.

Teratogenic. An agent, i.e. drug, organism, causing congenital abnormality.

Thrombin. An enzyme which converts fibrinogen to fibrin, causing clotting of blood.

Vaccination. Inoculation with a vaccine.

Vasa. Vessels.

SECTION I
Normal Pregnancy,
Labour and Puerperium

CHAPTER I

Menstrual Cycle

It is important to have an understanding of the menstrual cycle before learning about pregnancy, for it is an interruption in this cycle, manifested by amenorrhoea, that leads most women to suspect that they are pregnant, and to consult their doctor.

The menstrual cycle involves (Fig. 1.1):

- 1 The cerebral cortex which controls the hypothalamus by producing the gonadotrophin releasing factor.
- 2 The hypothalamus which is concerned with the rhythmical control of the ovarian-menstrual cycle. It produces follicle stimulating and luteinising releasing factors which act on the anterior lobe of the pituitary gland.
- 3 The anterior lobe of the pituitary gland produces follicle stimulating hormone which causes ripening of the Graafian follicles, and luteinising hormone which, combined with follicle stimulating hormone causes ovulation and subsequently maintains the corpus luteum.
- 4 The ovaries secrete oestrogens from the Graafian follicle and oestrogens and progesterone from the corpus luteum. These ovarian hormones bring about changes in the endometrium and myometrium.
- 5 The uterus. Menstrual, proliferative and secretory changes occur in the endometrium and contraction of the myometrium takes place.

The menstrual cycle is closely associated with the ovarian cycle, and the physiological purpose of the ovarian-menstrual cycle is ovulation which takes place fourteen days prior to menstruation. Menstruation is the physiological bleeding from the endometrium at regular intervals from puberty to the menopause. The menstrual cycle extends from the first day of menstruation to the day prior to commencement of the next menstrual flow. The average cycle lasts for twenty-eight days and is divided into three phases as follows:

- 1 Menstrual phase. The endometrium is shed down to its basal layer. It degenerates due to spasm of the arteries and deprivation of blood flow. Necrosis occurs and the lining is expelled by contraction of the myometrium under the influence of oestrogens. It lasts for about five days during which time 50–100 ml of blood are lost.
- 2 Proliferative phase. Regeneration of the tubular glands and stroma of the endometrium occurs from the basal layer, and is under the influence of