

**A REVIEW
ON
INFANTILE SEBORRHOEIC DERMATITIS**

THESIS

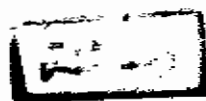
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INTRODUCTION

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Infantile seborrhoeic dermatitis is a self-limiting, non -eczematous, erythemasquamous eruption of early infancy, which commonly begins in , and may be confined to, the scalp, but classically also involves the flexures more or less symmetrically (Bandmann, 1963). It is a common condition which begins usually before two months of age (Forfar and Arnèil, 1978).

This dermatosis has many features in common with seborrhoeic dermatitis of adolescence and adult life. (Bandmann, 1963), yet the relationship between both of them remains problematical (Kokil, 1954).

Infantile seborrhoeic dermatitis simulates other dermatoses which occur in early life, the most important of which are: "Psoriasiform napkin dermatitis" [whose exact diagnosis is still not yet settled] , which is described in the literature under other various titles, and "Atopic dermatitis".

In this thesis we aim to review the various aspects of this dermatosis "infantile seborrhoeic dermatitis" which includes its: clinical picture, aetiology, pathology, differential diagnosis and treatment, paying a special attention to discuss the treatment of "infantile scalp seborrhoeic dermatitis" .

REVIEW OF LITERATURE

AN ACCOUNT ON THE BIOLOGY OF

SEBACEOUS GLANDS

Sebaceous glands are for the most part appendages of the hair follicles (Serri and Huber, 1963). Most of these glands are attached to hair follicles and pour their secretion inside the canal of the follicle (Montagna, 1979), yet some glands open directly upon the surface of the skin (Montagna, 1963).

These glands are large and numerous on the midline of the back and largest on the facial disc and forehead, the external auditory meatus, and on the anogenital surfaces (Montagna, 1963; Ebling, 1970) and in the scalp (Montagna and Parakkal, 1974).

Regardless of variability in size , human sebaceous glands consist of multiple aggregates of acini (Montagna and Parakkal, 1974) which characteristically develop or differentiate by the centripetal enlargement of their cells (Montagna, 1974), where as the cells migrate centrally towards the lumen of the gland, they gradually synthesize and accumulate fat globules in their cytoplasm, become progressively larger and distorted and then when

they have finally expended all their vital resources, die and disintegrate and thus form sebum (Montagna, 1979).

The acini in a glandular unit, like the individual cells within each acinus, vary in their state of differentiation and maturity (Montagna and Parakkal, 1974), where differentiation from what previously expressed is the orderly synthesis, segregation, and accumulation of lipid droplets which culminate in enlarged, misshapen cells that fragment to form sebum. Once mature sebaceous cells die and form sebum, they are replaced by dividing undifferentiated cells which balance the loss (Montagna, 1974), and light microscopic studies had revealed that the outermost layer of the sebaceous acinus is germinative (Strauss et al., 1976) which remains undifferentiated (Montagna and Parakkal, 1974).

Human sebaceous secretion, i.e. sebum, is a mixture of fats and waxes (esters of higher aliphatic alcohols and of cholesterol) and hydrocarbons, including squalene. This sebum exudes from the gland through the short sebaceous duct and then along the hair follicle, collecting by-product of epidermal keratinization along

the way (Cohen and Pegum, 1970). It joins the fatty products of surface epidermal keratinization to form the lipid film at pH 4.2 to 5.6 on the skin surface (Stewart et al., 1978).

THE DEVELOPMENT OF SEBACEOUS GLANDS.

Sebaceous glands appear first as solid swellings of cells called the "anlage" on the posterior wall of the hair peg. Within a short time, the cells in the center of this growing "anlage" lose their glycogen content and acquire a foamy appearance as lipid droplets accumulate, i.e. as differentiation begins. From that moment on, the process of sebaceous differentiation proceeds rapidly while the gland grows and becomes multiacinar, mainly through the formation of buds on its peripheral wall (Serri and Huber, 1963).

A similar kind of differentiation to the previous mentioned one, also occurs in the cells in the center of the future duct, which at first is a solid cord. These cells differentiate linearly in a column that extends through the epidermis to the surface and proceeds for a distance parallel to it. When these cells are mature, i.e. full of sebum vesicles, they lose their integrity, rupture and form a sebum channel that represents the first pilosebaceous canal (Montagna and Parakkal, 1974).

From their earliest differentiation at 13-15 weeks of fetal life, the sebaceous glands are large and functional; the sebum forms a part of the vernix caseosa (Serri and Huber, 1963). The same previous authors also mentioned that three-and-a-half month old fetuses, have well defined glands in the scalp and face, where hair follicles differentiate first, but not elsewhere on the body. However elsewhere on the body, sebaceous glands appear at different times after the hair follicles are formed (Montagna and Parakkal, 1974), appearing in a cephalocaudal sequence as most of these glands arise from hair follicles (Montagna, 1974).

At the end of fetal life, the sebaceous glands are well developed and large over the entire surface of the skin, and particularly in those areas in which later in adult life there will be the most glandular activity (Serri and Huber, 1963). The glands are also large in newborn infants but they regress shortly after birth (Montagna, 1974).

COMPOSITION OF SKIN SURFACE LIPID IN RELATION TO AGE:

Human skin surface lipid consists of glycerides, free fatty acids, wax esters, squalene, cholesterol esters and cholesterol (Ebling and Rook, 1979). This skin surface lipid is derived from two principal sources; the sebaceous glands and the epidermis (Downing and Strauss, 1974). The squalene and wax esters are uniquely derived from the sebaceous glands (Ebling and Rook, 1979; Strauss, 1979), and the cholesterol and its esters are the characteristic components of epidermal lipids (Downing and Strauss, 1974).

There are variations in the composition of skin surface lipid with age (Sansone-Bazzano et al., 1980). Thus shortly after birth, the surface lipid composition resembles the adult one (Ramasastry et al., 1970) where sebum is the predominant lipid on most areas of the skin during adulthood (Downing and Strauss, 1974). At that former period of life, the sebaceous glands are presumed to be active as the result of their stimulation by maternal androgens (Ramasastry et al., 1970).

The studies done by Agache et al. (1980) showed, that during the 2nd and 3rd months of life, the sebum level in infants in both sexes fall gradually to the 6 month baseline, remaining there until the end of the 1st year of life.

Ramasastry et al. (1970) reported that between the age of 2 and 8 years, the characteristic components of epidermal lipid (cholesterol and its esters) were more prominent in skin surface lipid of the forehead and where the sebaceous lipids (wax esters and squalene) had declined. Between 8 and 10 years, the wax esters and squalene rose to about two -third of the adult level, and at 10-15 years the surface lipid resembled that of adults.

These previous informations reported by Ramasastry et al. (1970), appear to correlate with the changes that occur in sebaceous glands at the different periods of life; for Montagna (1974) stated that the sebaceous glands are large in newborn infants and they regress shortly after birth and remain relatively small throughout

FACTORS AFFECTING THE SEBACEOUS
GLAND AND ITS SECRETION.

(a) The Arrector Pili muscle:

Contrary to the previous belief, Kligman and Shelley (1958) proved that the muscles of piloerection are unable to propel sebum to the surface. They explained this by saying that at the first sight, it seems strange that sebum should not be extruded by the contraction of the piloerection muscle. Actually, it is only a narrow slip which encircles the greatest circumference of the gland without completely enclosing it. The effect of its contraction may be similar to tying a string around the middle of a fully blown balloon, a process which would not greatly change the internal pressure.

(b) The skin surface Lipid and the "Feedback Mechanism" :

Earlier investigators have proposed that sebaceous secretion was an intermittent process controlled by a feedback mechanism wherein the production of sebum was dependent upon the thickness of the surface film. Thus,