Dermatitis seborrhoica
Seborrheic dermatitis

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The article deals with the definition, epidemiology, etiopathogenesis, clinical picture and therapy of seborrheic dermatitis.

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Definition and epidemiology
Seborrheic dermatitis (SD), sometimes called seborrheic eczema as well, ranks, due to its clinical similarity to atopic eczema, among chronic skin diseases characterized by eruption of relapsing erythematousquamous lesions in skin areas rich in sebaceous glands and in intertriginous areas. Face areas, scalp, upper trunk and damp areas are typically affected. It is a very common disease of children between 3rd week and 3rd month of age when its lighter form in the scalp affects 2/3 of children, more often boys. In adults the disease is more frequent in men in their 40s, the prevalence is relatively high in adults, i.e. 5-10% of the world population.

Etiopathogenesis
There are several etiopathogenetic factors of seborrheic dermatitis which depend on and determine one another. During the therapy it is necessary to affect all the factors at the same time.

The first predisposing factor is the increased sebaceous glands secretion, so-called seborrhoea, hence the name of the disease. In newborn babies the increased sebaceous glands activity is caused by androgens, transmitted transplacentally and also by their increased production in the adrenal cortex in this period of life. The hormones level explains why the disease appears in infants and then spontaneously disappears and relapses after teenage years. In adults the increased sebaceous glands secretion is probably caused by genetic predisposition.

The second important factor is the influence of the yeast Malassezia furfur (Pityrosporonovale). Although it is a common skin saprophyte, its occurrence is higher in places with increased sebaceous glands secretion, which is a nutrient substance for its growth. Apart from the direct negative influence of Malassezia on the skin barrier (it releases fatty acids, which transmit through the stratum corneum), in patients with SD also the abnormal immune response to the yeast itself is important.

The third factor is disruption of the acid protective skin biofilm. That is caused mainly by overuse of soaps containing sodium laureth sulphate (syn. natrium lauryl sulphate). This destroys the protective skin film and enables yeasts outbreak. Such soaps should not be used neither by SD patients nor by patients with other kinds of eczema.
The fourth factor are the **climatic conditions**, we can observe improvement of the disease in summer, at the sea, in the mountains, and deterioration during winter months. Exacerbation of symptoms in patients working in air-conditioned offices with dry air is typical.

The fifth mentioned factor is the **psychical influences**, the condition worsening is observed in stress. Managers meeting the two last mentioned criteria suffer from this disease more and more often.

**Classification**

The disease is divided into two clinical forms. In newborn babies and infants we talk about *Dermatitis seborrhoica infantum*. Its rare variety in children with immunodeficiency is *ErythrodermiadesquamativaLeiner*, when a serious erythroderma develops (pict.1).

In adults we talk about *Dermatitis seborrhoica adultorum*. The adult form is divided as for the extent of affected areas into a focus, intertriginous and erythrodermic form. Infant SD differs in its clinical symptoms from teenage SD. However, the main therapy principles are the same.

**Clinical picture**

In newborn babies and infants the disease affects the scalp, eyebrows, central face parts (pict. 2), in more serious cases even the intertriginous areas such as diaper area (pict. 3). Yellow scaling on a non-inflammatory or slightly inflammatory base is typical. On the scalp there is always a higher amount of firmly attached yellowish scales, this clinical picture is called crista lactea, which is milk crista, colloquially cradle cap (pict.4). Suppurating lesions often appear behind earlobes (pict.5). In contrast to atopic dermatitis there is no itching.

In adults we differentiate **focus seborrheic dermatitis, intertriginous form of seborrheic dermatitis and seborrheic erythroderma**,

In the *focus form* the most often affected area is the scalp (pict. 6) and face – external auditory meatus (pict. 7), retroauricular area, glabella area (pict. 8), nasolabial fold (pict. 9) and lateral parts of the neck. The scalp affliction clinically varies from slight focus scaling to development of heavy adhering crusts, i.e. tinea amiantacea (pict. 10).

In the *form affecting the damp areas* symptoms appear in axillas, under breasts, around the umbilicus, groins and perianal and genitocrural region. The focus dissemination leads to the *erythrodermic form*, which manifests itself by the presence of changes in all mentioned regions including big joints flexures. This form is often complicated by secondary bacterial infection and tends to exacerbate.
Complications
The most common complication of the seborrheic dermatitis is the secondary infection caused by the yeast microorganism Candida albicans (syn. candidiasis, moniliasis). First an eruption of papulopustules appears in the red areas which later erode. On the edges of the affected area we can see multiple maculopapular satellite lesions with collar-like peeling. The candida infection usually spreads also to other areas and often can be seen oral cavity candidiasis (soor) or painful reddish chapped mouth corners with whitish coats (anguli infectiosi). Another complication can be seborrheic blepharitis (eyelid inflammation) and in men seborrheic blanitis.

Differential diagnosis
In differential diagnostics we also have to think of perioral dermatitis, atopic eczema and in damp regions intertrigo and erythrasma. Perioral dermatitis appears usually after long-time non-indicated use of local corticoids, the symptoms are papulas on erythematous base on the concave face areas (pict. 11). The dissemination is usually perioral and periorbital. Atopic eczema shows more intensive pruritus and usually starts after 3 months of age. The focuses can be reddish and it is often very difficult to differentiate it from SD. Some authors even doubt the existence of SD in infants as an individual clinical unit and consider it a variety of atopic dermatitis. Sometimes we do not manage to tell both diseases apart until they develop more (“wait and see”) which happens usually after the first year of age. In about one third of children SD changes into atopic dermatitis. Intertrigo (dermatitis intertriginosa, galls) also appears relatively often in obese individuals. It is caused by mechanical rubbing of skin against skin or skin against a diaper in combination with other outer influences (perspiration, urine, stool) in areas with folds, most commonly in groins. Clinically these are sharply circumscribed red, often suppurating areas that burn and hurt. Secondary bacterial or yeast infection often develops. Erythrasma is a disease caused by the gram positive rod Corynebacterium minutissimum. In the clinical picture we can see sharply circumscribed maculas of brownish red colour merging into lesions or areas with satellite maculas on the border, sometimes with light scaling affecting interginous areas, mainly groins.

Therapy
The seborrheic dermatitis treatment must be complex and includes the antiseborrheic, antimycotic, keratolytic, desiccation and antiseptic therapies. To reach a successful therapeutic effect, all the curing procedures must be done simultaneously. The antiseborrheic ichthammol (syn. ichthyol) stays the main SD medicine, the newly tested substances have not surpassed it as for their efficacy. The only thing that has changed is the galenic form used for the ichthammol application, the former pastes and creams have been substituted by a therapeutically more suitable fluid cream-paste (e.g. Cutozinc Ichtamo).
The history of ichthammol in medicine started two centuries ago. In the area of today’s Germany and northern Italy mild mud deposited on the seabed throughout the development of our planet, which gradually changed into bituminous shale (pict. 12). During the Alpine orogeny the shale layers were lifted up to the height of 2000 m over the sea level. That explains why nowadays’ deposits of the so-called oil shale are found high in the mountains, in areas of “sea fields”. Nowadays it is from these deposits where we get different active substances from. Since the Middle Ages ichthyl has been obtained by burning this shale (the name is derived from the Greek ichthys = fish; the denomination derives from the sea fish fossil finds in shale layers). Today’s technology enables burning shale in vacuum producing oil, which is then processed by distillation.

The first scientific work comparing curing effects of ichthammol and coal and wood tar dates back to the 80s of 19th century. Its author was the famous German dermatologist P.G. Unna who spread the ichthammol application to a number of other dermatologic diseases, such as frost bite or swelling, in some cases he even recommended ichthammol for internal use.

Apart from the ichthammol classic dark form nowadays also a so-called light ichthammol is produced by an analogous procedure. The production procedure differs by a multiple distillation and neutralization method, so the resulting product does not have the “ichthammol” smell. The classic dark ichthammol is nevertheless significantly more effective so it is also preferred in therapies.

Ichthammol works antiseborrhoeically, decreases the sebum production. It has shown antimicrobial, especially antimycotic effects as well. It also works anti-eczematously and fastens resorption of inflammatory infiltrates. The antimycotic effect is caused by phenols and sulphur presence, the anti-proliferation effect on the inflammatory cell infiltrate and epidermal cells is caused by napthalenes. The considerable antibacterial and antimycotic effects have been recorded in many scientific studies. The effect of ichthammol against Staphylococcus aureus, Streptococcus haemolyticus and Staphylococcus epidermidis have been proven. Large-scale studies, e.g. in patients suffering from acne vulgaris, showed a considerable decrease of sebum production and thus reduction of comedones production after the use of 1% ichthammol. Ichthammol does not irritate the skin, it has low sensitising potential and contrary to tars it does not have photo-sensitising effects.

In contrast with coal tar or tar from different kinds of wood ichthammol when applied on the surface does not absorb into the blood circulation and as it does not contain polycyclic aromatic hydrocarbons it is not a potential carcinogen.

Ichthammol is externally used in concentrations 1% in children and 1-3% in adults 3x per day in a thin layer.

Another indicated therapeutic group are antimycotics which are mainly used in a form of shampoo (e.g. Micetal shampoo) in the hair and in a form of cream-paste (e.g. Imazol cream-paste) on the skin. The antimycotic cream-paste is applied only in a thin layer in the evening and in the morning we apply ichthammol. A serious inflammation sometimes has to be soothed by using mild corticosteroid
preparation which is applied not more than 2x per day during 7 days and is always prescribed in combination with an anti-yeast preparation (e.g. Imacortcrm).

To remove crusts from the scalp keratolytics are used. The most common keratolytic substance is urea, usually in 4% concentration. We recommend applying the preparation with urea content (e.g. AD lotioChronic) into the hair in the morning and then in the evening washing it out by means of special washing gel. Gradually the crust layers will come off. These layers have to be indispensably removed as they represent yeast residues which might aggravate the condition.

To wash the affected skin special antiseptic washing preparations are used. These first remove the layers of the preparations applied during the day and at the same time they have antiseptic effects. The most commonly used soaps contain sodium laureth sulfate which excessively irritates the skin, dries it and removes the protecting skin biofilm. We thus prefer medicinal non-irritating washing gels that do not contain sodium laureth sulfate and that contain also an antiseptic component with an anti-yeast effect (e.g. Cutosan washing gel).

If the focuses suppurate, which happens above all in damp areas, zinc preparations are used. These have a deessicating and also protective effect. Just by drying the focuses, yeasts and other pathogens are eradicated in a physical way, as the yeasts do not reproduce in a dry environment. However, it is necessary to apply just an ultrathin layer of the preparation. Sometimes it happens that mothers or nurses apply the protective preparation in a thick layer believing that they will help the patient “more”. Nevertheless, the opposite is true, because like that an occlusive effect is reached and the patient’s condition may even worsen. Below the thick airtight layer of the preparation pathogens may reproduce. An ideal “ultrathin layer” may be applied using the modern protective zinc spray preparations (Cutozinc 10% Spray). The galenic form of the spray enables applying a thin layer of the protective cream without having to touch the irritated or often painful skin.

Summary
In the recent years a number of active substances have been tested to treat seborrheic dermatitis. None of them has brought the curing effect. Ichthammol keeps having the highest efficacy and therapeutic effect on this difficult-to-cure disease. Innovation has been seen in the new application forms of the preparation, that enable an easy application of the ichthammol preparation for the patient, improving the therapeutic effect at the same time.

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