

Psychosomatic Gynaecology - On the Endocrinology of Skin and Psyche

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Introduction

Skin and psyche play an incidental, yet important role in daily gynaecological practice. As in any medical field, specialists often see patients with problems that do not fall within the scope of their primary practice. Yet, most gynaecologists are aware of the close interactions of somatic and psychic issues in their patients. Since many female patients have come to consider their gynecologist to be a primary care practitioner for females, gynaecologists cannot only offer a personal access to their patients but have them benefit from examining the interactions between soma and psyche. Especially as to issues of skin and psyche, patients welcome professional advice to improve both their outer appearance and their inner experiencing. Since hormones have always played an important role in gynecology, doctors can utilize them to intervene on skin and on psyche in one or another way.

Psychosomatics

Skin and psyche are possibly the two subject areas that are underestimated the most in public opinion. This is probably due to the splitting of medical subjects that doctors and patients have grown accustomed to for a long time. There are dermatologists for skin issues, and psychiatrists for psychic issues. Especially patients having well-internalized the Cartesian disruption of body and soul tend to present their doctors mainly symptoms specific of their very subject area, assuming the differentiation of medical subjects to meet their own bodily experiencing. Moreover, in gynaecological practice, severe dysfunctions, ailments, and diseases often have to be in the foreground, making seemingly bland disorders look like minor disorders although these may compromise everyday life heavily. Also, the average patients' personal priorities of well-being have to be taken seriously. Through this, a long-term basis for a well-functioning doctor-patient relationship can be created and may sustain through any kind of future issues. It can be achieved in any medical field and within a reasonable time frame [1]. In terms of gynaecological endocrinology, a perspective of hormonal intervening on both skin and psyche can be helpful in reaching the patients' needs of an integrative and personal perception of them. Of course, severe psychosomatic disorders, e.g. dermatitis induced by delusion or paranoia, require transferring to a psychiatrist; those are quite rare, though [2]. However, many psychosomatic disorders are easily accessible when viewed from an integrative perspective of bio-psycho-social interaction, especially in gynecology-associated issues.

Beforehand, a close look at the effects of estrogen and gestagen in skin aging will provide access to issues of skin, a subject area which



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patients consider more important than usually thought of.

Estrogen and Gestagen

The anabolic effect of estrogen on epidermis stimulates cell differentiation. It increases mitotic activity in the stratum basale and the stratum spinosum. The effect of estrogen on keratinocytes runs via interposed growth factors. The insulin-like growth factor (IGF-I) is mostly significant: fibroblasts in the epidermis are stimulated to set free IGF-I, the latter stimulating the growth of epithelium in the epidermis. There is also an increase of water in the skin coming from generating of endogen hyaluronic acid. Also, there is a significant increase of collagen and elastin in the skin. Frequency and depth of wrinkles are influenced significantly by estrogen [3]. The National Health and Nutrition Examination Survey (NHANES) prove estrogen substitution leading to a significant decrease of skin wrinkles in postmenopausal women [4]. Yet, also topical hormone treatment can render effects on the collagen balance, the concentration of hyaluronic acid, skin thickness, and the keratolytic moisture level [5]. As human skin ages in two ways, one induced by outside factors like environmental noxa and ultraviolet light, the other induced by genetics, there have to be two perspectives. As ultraviolet light is responsible for around 70% of extrinsic skin aging [6], it has been coined photo aging which in its pathomechanism not only causes oxidative damage in cell structures but also induces low level inflammatory processes. These processes, leading to a degeneration of dermal extracellular fibers, induce matrix-metalloproteinase's, leading to high level decomposition of type-1 collagen and to an accumulation of pathologic elastotic material [7]. The mechanism of intrinsic skin aging is determined by genetics. Cell regeneration may be reduced; alterations in the hormonal balance lead to atrophying of epidermis, dermis, subcutis, and skin appendix fabric like hair follicles and sebaceous glands [8]. Keratinocytes in epidermis and fibroblasts in dermis decrease in the aging process. Especially changes in the extracellular matrix are responsible for the phenotype of intrinsic skin aging. The clinical image of very thin and dry facial skin with petite wrinkles is due to intrinsic skin aging that goes along with postmenopausal reduction of dermal collagen and hyaluronic acid

[9]; a fact that will be helpful for patients to know about, similar to the current approach of patients' courses in psycho-dermatology [10].

Application

The choice of which estrogen to apply is crucial. The traditional application of 17-beta-estradiol has been outdated since in topical application it is resorbed on a high level and has systemic effects on the endometrium. Here, as in treatment of dry vagina syndrome, estriol is the substance to be chosen. Only in the treatment of effluvium, 17-beta-estradiol is to be favored. Most convincing in gestagens is their influencing the internal regulation of collagenases which are matrix-metalloproteinase's that are found in progesterone which is produced in the body naturally. Collagen, elastin, and several tissue proteins are decomposed by them; this being essential for remodeling of dermal tissue [11]. Progesterone as a tissue inhibitor has an anti-collagenolytic effect, making it a significant ingredient of hormonal treatment. As to synthetic gestagens, especially those with anti-androgenic effects are important. Anti-androgenic oral contraceptive treatment serves as very effective treatment of acne vulgaris. Applying anti-androgenic gestagen gel is effective and can also be added to an oral contraceptive in treatment of females.

Androgens in dermal application can lead to an increase of cross-linking of dermal tissue, influencing the micro-architecture of subcutaneous lipid tissue. Cellulite in females can be faced by this approach. Cellulite as an alteration of subcutaneous lipid tissue is a phenomenon causing much pressure on females. Yet, the less close meshed tissue in females is biologically necessary. As tissue septa of the subcutis are columnar, there is space to protract in pregnancy. In case of the septa cavities filling with lipid cells and lip-edema, especially the gluteofemoral region will show orange peel skin. Local application of androgen will modify subcutaneous tissue in generating lateral cross-linking. As testosterone will be resorbed and thus will cause systemic effects similar to 17-beta-estradiol, non-aromatizable androstanolon is to be favored. As females presenting cellulite mostly will not lack androgen, in applying topic testosterone treatment testosterone levels would be raised which would be the opposite of the effect intended. That is why testosterone gel is not indicated in cellulite treatment.

Aside from androstanolon, a few cosmeceuticals might be an option [12]. A mesotherapeutically induced decomposing of fibrosclerotic cellulite structures through collagenases and hyaluronidases seems to be effective [13].

Psychosomatic and Affective Disorders

In peri- and postmenopausal females, hormonal interventions can also have strong effects not only in somatic issues but also in issues of psyche. It is common ground that hormones and psyche have significant interactions. Hormones influence psychic experiencing in one or another way [14,15]. While even issues of cultural and timely dependencies of hormone levels have been examined [16], some solid effects of estrogen on psychic disorders have been observed not only in regards to affective disorders but also to psychosomatic functioning disorders without clear etiology. In e.g. Pruritus vulvae there is, aside from clearly diagnosed Lichen sclerosus, rarely any somatic etiology found. A low estrogen level has no etiological relevance here [17,18], whereas e.g. minor depressive symptoms can be relieved by estrogen substitution [19,20]. In psychosomatic functioning

disorders in gynecology, verbal psychotherapeutic interventions are most appropriate; yet severely mentally disturbed patients will not be reached by these and instead be transferred to a specialist.

Some interventional studies have hinted at an antipsychotic effect of estrogen therapy [21] which has recently been elaborated on by Bergemann [22]. Still there is a lack of studies on the connection of hormonal phases of change, as in menopause, in relation to the emerging and the course of anxiety disorders. Some case reports and a few studies with small samples hint at a dependency of anxiety symptoms on menstrual cycle in luteal phase, and on recrudescence or deterioration under oral contraceptives, in pregnancy, after delivery, and in perimenopause [23]. Perimenopausal affective disorders can be treated by hormonal substitution [24]. Last but not least, in Bulimia nervosa and associated disorders like depression, aside from Selective Serotonin Reuptake Inhibitors (SSRI) and psychotherapy, antiandrogenic contraceptives can render good effects [25]. Major depression patients must be transferred to a psychiatrist, though.

Premenstrual Syndrome (PMS)

The connection between menstrual cycle and mood levels has been explored extensively [26]. PMS as cycle dependent syndrome with physical and psychic symptom formations can be accompanied by gain of weight, edemas, and mastodynia. Tension, anxiety, and depressed mood are main symptoms. Beginning in luteal phase it usually clears up with menstruation. Progesterone levels seem to be related to the syndrome, yet pathogenesis remains unclear. Familial factors of vulnerability have been discussed; serotonin levels in the central nervous system are likely to be connected with PMS. The metabolism of sexual steroids is also discussed, especially in progesterone metabolites influencing the GABAergic system. As to intervening, highly individualized therapy is necessary since each patient requires her own apt concept of somatic and psychic factors. Establishing of a long cycle may be an option [27]. In severe PMS, again SSRI have generally been most effective. Suppressing of the ovarian function by GnRH analogues requires hormonal substitution at any rate. Oral contraceptives and aldosteron antagonists can be effective in mild PMS; verbal interventions as to the patient's self-perception will have to be pondered. Some patients will appreciate focusing on female identity issues; yet transferring to a specialist will be useful in some cases [28]. As premenstrual tension (PMT) is very common (up to 80% in the UK, USA and France), adjusting of their stress levels should be an important goal for females [29] which might be offered patients' courses.

Skin and Psyche

The importance of an integrative view on a broad spectrum of psychosomatic phenomena has been depicted by studies on psycho-dermatology and psycho-allergy. Common syndromes that are incidentally presented in gynaecological practice, e.g. atopic dermatitis, pruritus, or skin picking syndrome can be etiologically traced back to conversion, trauma or interpersonal conflicts [30-32]. Whereas psychic symptoms in PMS are often assumed to stem from negative feedback of prolactin on dopamine, in skin issues psychologically processed events that patients have experienced may converse into somatoform phenomena, or find their deposit in behavioral idiosyncrasies, as in obsessive-compulsive impulses. The

therapeutic approach, aside from transferring to a dermatologist, will mostly be on a verbally interventional level. Yet, gynaecologists will have to take into account phenomena of resistance in patients who are directly faced with interpretations of psyche as to somatic symptoms. In taking into consideration the psychic structure level of the patient, careful interpretations can pave the way for raising awareness of psychosomatic interactions [33].

Some discussions of epigenetics of allergy-related syndromes have recently started [34]; at any rate the psycho-dermatological concept of cutan stress reaction has been elaborated on extensively [35]. In this concept, by activation of the hypothalamic hypophyseal adrenal axis and the sympathicus axis, cortisol and noradrenalin levels increase. So chronic stress experiencing probably relates to developing of T(H2)-dominated allergic disorders like e.g. atopic dermatitis [36]. The stress concept may not only be applied to well-known gynaecological syndromes like secondary amenorrhoea, hypothalamic amenorrhoea, cycle irregularities, fertility disorders, and PCOS but it is likely to have relevance for several dermal disorders, too. Apparently, psychosomatics can be applied as well in the broad sense as in the narrow sense of the word. Whereas intervening on a hormonal level in skin issues as well as in mild psychic disorders will be appropriate, suitable verbal intervening will be helpful in realizing a personal approach to patients [37], considering their emotional experiencing of body and psyche as a basis of an integrative treatment. Along with lifestyle issues, nutrition and hormonal interventions there is a necessity of acknowledging the interactions of bodily and psychic experiencing. Understanding of somatic symptoms occasionally as a substitute of emotional experiencing [38] can open a wide range of further interventional options.

Conclusion

Although the twenty-first century is said to be the century of biotechnology, in their practices doctors use verbal interventions every day. Along with usual pharmacological interventions, verbal interventions can be very effective. Gynaecologists have used them in an eclectic way ever since they have seen patients. Most of them are evidence-based, experience-based, or both at the same time. Not only in somatoform disorders but in many of patients' issues, thorough diagnostics and raising insight into bodily and psychic interactions in patients will raise motivation for further interventions and treatment options. Gynaecologists do have options of intervening on a hormonal and on a verbal level, at least in treating common bio-psycho-social disorders in their patients. A good mixture of these interventions will be most useful. Moreover, diagnostic, therapeutic, and rehabilitative verbal interventions in psychosomatic disorders should officially be paid more attention since they are more basic and more effective in daily practice than usually thought of.

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