Review article

UDC: 616.5-002-001.1-08
doi:10.5633/amm.2019.0423

CONTACT DERMATITIS – A REVIEW OF THE LITERATURE WITH THE CONNUBIAL TYPE IN FOCUS

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Contact dermatitis (CD) is an acute or chronic skin inflammation induced by exogenous exposition and direct contact with chemical, biologic, or physical agents. Classic types of CD are irritative CD (acute and cumulative with various subtypes), allergic (acute, subacute and chronic, with specific subtypes and noneczematous variants) and photoreactive CD (phototoxic and photoallergic). A specific form of CD is connubial CD which is caused by indirect exposure to substances via physical contact with marital partner or some other person with whom he or she lives. The agent which causes dermatitis is not used by the patient himself.

As CD is frequently encountered in everyday practice, with polymorph clinical picture and various etiology, it is very important to discover the cause of the disease and its elimination, if possible, is of greatest importance. Connubial dermatitis is frequently unrecognized, which creates difficulties in treatment.

Acta Medica Medianae 2019;58(4):152-157.

Key words: *contact dermatitis, frequency, causes, connubial dermatitis, diagnosis, treatment*

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Introduction

CD is an acute or chronic skin inflammation induced by exogenous exposition and direct contact with chemical, biologic, or physical agents (1).

Four to seven percent of dermatologic consultations are the consequence of CD. It most frequently affects hands - in about 75% of all cases (2), and in 90% of occupational CD (2).

CD accounts for more than 77% of all occupational skin diseases (3).

The Aim

The aim of this research was to present the most recent data about CD and its various types, causes, types of allergens, changes of localization, etc. Studies on connubial dermatitis are specifically analyzed since this disease is not frequently discussed and it is difficult to diagnose.

Types of CD

Classic types of CD (4, 5) are: irritant CD, acute-simplex and cumulative-detritiva (6-8), allergic CD (acute, subacute and chronic) and photoreactive CD (toxic and allergic).

There are various subtypes of irritant CD (9): acute irritant, late acute, traumatic, pustular, irritant reaction, cumulative, asteatotic, acneiform, non-erythematous, subjective or sensory, airborne and frictional.

Depending on duration, the clinical picture of ACD varies (10).

Acute ACD usually appears suddenly and can be manifested by a clinical picture characterized by several stages: erythematous, papulous, vesicular, bullous, pustulous, madidans, squamous, crustous. Usually there is more than one center which is confluent with others. It is itchy and appears upon repeated exposure to the allergen in sensitized persons.

Subacute ACD is characterized by less pronounced erythema, exudation and edema with dominant inflammatory infiltration.

In chronic stage, the skin is dry, thick, brownreddish, lichenified with rare papulae, squama, sometimes with rhagades. Itching is also pronounced.

Phototoxic CD is provoked by tar derivatives, drugs, furocoumarin colors (11), while photoallergic CD is induced by antimycotic drugs, perfumes, halogenated salicylanilides, phenothiazines, sulfonamides, and sunscreen agents.

Specific CD types are (12, 13): airborne CD, generalized/systemic, pigmentary, ectopic, connubial (consort, paradox and protein CD).

Noneczematous CD variants are (14-18) lichenoid CD, erythema multiforme-like dermatitis, cellulitislike, contact leucoderma, contact purpura, erythema dischromicum perstans-like dermatitis, inflammatory, granulomatous, actinic prurigolike, follicular CD.

Contact allergic dermatitis can be provoked by (19) plants, metals, perfumes, garments and fabrics, rubber, plastic, preservatives, cosmetic products, computer mouse, drugs, and it can also be work-related.

ACD can appear in any part of the body (20-22) but it most frequently appears on the hands, feet, in axilla, on the eyelids, in anogenital and diaper region, perorally (contact stomatitis and cheilitis).

The most frequent allergens (13) are nickel, neomycin, Balsam of Peru, perfumes, thimerosal, gold, formaldehyde, quaternium-15, cobalt and bacitracin.

There is no difference between genders when it comes to the reaction to primary irritants (23). Also, prevalence of contact sensibilization does not depend on gender but on the intensity of the previous exposure to the specific allergen (24).

Contact sensibilization in children is a serious problem (21). ACD can be registered in 3-5 year old children, while the prevalence grows with age (25-28) and is the same as in the adults. Patch testing is safe and efficient (29, 30).

"Connubial" and "Consort" contact dermatitis

Connubial dermatitis is caused by indirect exposure to substances via physical contact with a marital partner (31). It is not necessary for the contact to be of a sexual nature (32, 33). Connubial ACD appears when the agent which causes dermatitis is not used by the patient himself, but by the partner or some other person with whom one lives (33) since it occurred through a sexual contact (34).

Although the term connubial is mainly used, it would rather mean that marital partners are involved, while "consort" refers to a partner or a friend (which would be more relevant to the actual behavior) (11) and other family members.

Sexual contact or other sexual activities could also be the source of irritation, trauma, allergic or nonimmunologic contact urticaria (34).

First reports on connubial contact allergic dermatitis date back to 1975 when Wilkinson (35) determined that ACD or photodermatitis can be the consequence of home-based activities, marital contacts or drugs usage.

In 1976, Caro (36) presented a case of a patient who had a rash on the right side of the neck and the front part of the right axilla. The sensibilization occurred due to the contact with bed sheets contaminated with benzoyl peroxide used by his wife for acne treatment.

In a 55 year old patient, sensibility to propylene glycol was registered after having used a specific cream (37). One year later, 24 hours after the sexual intercourse with his wife, he had ACD on his penis and scrotum. Sensitivity to vaginal lubricant, which his wife had used, was proven and it contained propylene glycol (38). A similar situation occurred in a 40 year old patient who developed pruritus, erythema, erosions and edema on glans and prepuce 24 hours after sexual intercourse. He had had similar changes three months earlier. The cause was a lubricant that his wife had used prior to the intercourse. Sensitivity to the readymade preparation was registered as well as to chlorhexidine gluconate (39).

A 30 year old male always got dermatitis on his penis, scrotum, and lower abdomen after the intercourse with one of his girlfriends. There were no similar changes after the intercourse with other women.

Testing proved a positive reaction to Balsam of Peru which was one of the ingredients of a hygienic spray that the girl used before the intercourse (40).

A 20 year old woman would always get rash on her face, neck, sometimes on hands after the intercourse with her husband. After it was proven that her partner had acne which he treated with benzoyl peroxide and testing showed positive results, the treatment was changed and the rash subsided (11).

A young woman had diffuse follicular rash on the upper arms, front part of the trunk and the inner sides of her thighs. When her boyfriend was absent, there were no changes. When he came back, rash reappeared after going to the beach. It was proven that the cause was a sunscreen lotion (Coppertone), which her light skinned boyfriend used for protection and after that they would have the intercourse (14).

Contraceptive rubber diaphragms, rubber condoms and spermicides can produce ACD in sensitive men and women. Women can get vulvitis and vaginitis while men can get balanitis. It is recommended to use nonrubber condoms or some other material underneath (41).

A 22 year old male had erythematous edematous dermatitis corpus on the penis and balanoposthitis several hours after the intercourse. He used condoms. Testing proved allergic reaction to thiuram mix and benzocaine. Benzocaine was incorporated in the gel used for the enhancement of the sexual intercourse (42).

Semen can also cause allergic reactions like contact urticaria and anaphylaxis in sensitized women (43-45).

A case of a 25 year old woman with the familiar atopic history was described. After a sexual intercourse she would get urticaria, swelling of her eyelids and abdominal cramps, and once she had circulatory collapse. When a condom was used, there were none of these symptoms. Sensitivity to semen plasma was proven. It is supposed that the cause is the protein which is found in the normal semen sample (46).

A seven months pregnant woman had clearly bordered dermatitis of the lower abdomen and back as well as on her legs after wearing her husband's trousers. He had psoriasis and was treated with dithranol. He did not take a shower 30 minutes after

the application of the medicine and wore the trousers. With consequent relevant behavior the appearance of irritation was avoided (44).

A 40 year old woman had repeated dermatitis eruptions of the left hand side.

The changes were related to the contact with her husband's perfumed skin. Testing proved sensitivity to the perfume ingredients. These changes stopped occurring when her husband stopped using that specific perfume (47).

A 50 year old male had three years old history of rash and itching on the left side of his chest, back and left hand. Patch testing proved a positive reaction to paraphenylene diamine and orange dispersion. It was a reaction to his wife's dyed hair, as she slept on his left side (48).

Two marital partners were treated for follicular pruritic rash and erosions without success. The treatment became successful only when it was realized that the problem was due to the contact with fiberglass with which her husband worked, and the wife washed her clothes together with his contaminated clothes, so that she got in contact with the same substance (33).

A 35 year old woman got erythema, vesicles and bullae on her face, back of the neck, breasts, bottom and upper extremities, after her husband had cuddled with her the previous night. The case became clear with positive test results to urushiol, wood extract in ethanol and crushed wood, the fruit of which her husband had eaten in the restaurant on the previous day (49).

A 52 year old female got androgynous alopecia due to the contact with her husband who was applying testosterone gel on his upper arm for hypogonadism for 18 months. Androgynous alopecia was confirmed on the basis of clinical and dermoscopic findings. Laboratory analysis showed high testosterone levels and free testosterone (50).

Connubial ACD can appear due to propylene glycol, hygienic sprays used by women, perfumes and contraception, Balsam of Peru, benzoyl peroxide and hair dyes, sunscreen lotions, rubber, benzocaine, paraphenylenediamine, drugs-corticosteroids etc. (42, 43, 47, 48).

In a 46 year old woman who worked with hop for 30 years and who had skin problems in the form of dermatitis and conjunctivitis, an allergic reaction to hop leaves was proven. Although she had stopped working, she had several relapses. It turned out that they occurred after she had slept with her husband in the same bed who had worked with hop and did not wash up. It was a simultaneous connubial and occupational dermatitis to hop (51).

Airborne agents can induce skin reactions. They can be irritant CD, allergic CD or photoallergic and phototoxic reactions, or photocontact urticaria, acne-like lesions, erythema fixum due to drugs, lichenoid rash, etc. (52, 53). Various pharmacologic classes of drugs can produce different reactions, either after direct contact or via inhalation (54).

A four year old boy was treated for asthma with Pulmicort aerosols (budesonide) and Bricanyl (terbutaline) in the inhalation chamber. After 4 days of treatment, his mother had an itchy swelling on her face with conjunctivitis. After the treatment with Tridesonit creme (desonide) it got worse. Prick tests proved sensitivity to budesonide and Pulmicort and positive tests to Tridesonit creme and triamcinolone acetonide. It was connubial ACD caused by corticosteroids, which is rare (55).

A 51 year old male had skin changes at the time when his four year old daughter was receiving corticosteroid inhalation therapy for her asthma. Here, besides sensitivity to budesonide and triamcinolone, sensitivity to prednisolone, hydrocortisone, tixocortol pivalate, hydrocortisone 17-butirat and amcinonide was reported (56).

Diagnosis, treatment and prevention

CD diagnosis is set on the basis of history, complete clinical checkup, elimination and exposition testing, functional skin ability determination and immunologic analyses (57).

Causal and symptomatic therapy is performed (58-61).

Occupational CD prevention is primary, secondary and tertiary (62).

Conclusion

Contact dermatitis is frequently registered in dermatologists' everyday work. Clinical picture is polymorphic and of extremely different etiologies. Discovering the cause of the disease and eliminating it, if possible, is of greatest importance. In order to accomplish that, it is necessary to perform an entire and conscientious checkup of the patient. If it is not the case, CD can remain unrecognized and unclear, which frequently happens when it comes to connubial contact dermatitis.

The paper was presented in 2016 at the Symposium "Dermatovenerology, sometimes and now", in Belgrade, marking the 90th anniversary of the Dermatology section of SLD.

The work has not been published so far.

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Revijalni rad

UDC: 616.5-002-001.1-08
doi:10.5633/amm.2019.0423

KONTAKTNI DERMATITIS – PREGLED LITERATURE SA KONUBIJALNIM TIPOM U FOKUSU

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Kontaktni dermatitis (KD) je akutna ili hronična inflamacija kože, koja nastaje usled egzogene ekspozicije i direktnog kontakta sa hemijskim, biološkim ili fizikalnim agensima. Klasični tipovi KD su iritativni (akutni i kumulativni sa raznim subtipovima), alergijski (akutni, subakutni i hronični sa specifičnim tipovima i neegzematoznim varijantama) i fotoreaktivni KD (fototoksični i fotoalergijski). Poseban oblik KD je konubijalni KD, koji je izazvan indirektnom ekspozicijom na supstance preko fizičkog kontakta sa bračnim partnerom ili drugom osobom sa kojom bolesnik živi. Agens koji je izazvao KD nije upotrebljen od strane obolelog.

Kako se KD često registruje u svakodnevnoj praksi, sa polimorfnom kliničkom slikom i raznovrsnom etiologijom, vrlo je važno otkriti uzrok bolesti i po mogućstvu ga ukloniti. Konubijalni dermatitis često ostaje neprepoznat, što stvara poteškoće u lečenju.

Acta Medica Medianae 2019;58(4):152-157.

Ključne reči: *kontaktni dermatitis, uzroci, konubijalni dermatitis, dijagnoza, tretman*