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

Mirjana Paravina, Marija Nedeva, Lazar Bajić

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.


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

Types of CD

Classic types of CD (4, 5) are: irritative 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, brown-reddish, lichenified with rare papules, 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, pigmented, ectopic, connubial (consort, paradox and protein CD).

Noncementated CD variants are (14-18) lichenoid CD, erythema multiforme-like dermatitis, cellu-

litis-like, contact leucoderma, contact purpura, ery-

thema discromicum perstans-like dermatitis, inflam-

matory, granulomatous, actinic prurigo-like, follicular CD.

Contact allergic dermatitis can be provoked by (19) plants, metals, perfumes, garments and fab-

rics, rubber, plastic, preservatives, cosmetic prod-

ucts, 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 dia-

per region, perorally (contact stomatitis and cheili-

tis).

The most frequent allergens (13) are nickel,

neomycin, Balsam of Peru, perfumes, thimerosal, gold, formaldehyde, quaternium-15, cobalt and bac-

itracin.

There is no difference between genders when it

comes to the reaction to primary irritants (23). Also,

prevalence of contact sensitization does not

depend on gender but on the intensity of the pre-

vious exposure to the specific allergen (24).

Contact sensitization 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 ex-

posure to substances via physical contact with a mar-

ital 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 in-

volved, while "consort" refers to a partner or a friend

(which would be more relevant to the actual be-

havior) (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 der-

matitis date back to 1975 when Wilkinson (35) de-

termined that ACD or photodermatitis can be the

consequence of home-based activities, marital con-

tacts or drugs usage.

In 1976, Caro (36) presented a case of a pa-

tient who had a rash on the right side of the neck

and the front part of the right axilla. The sensibili-

zation 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 propy-

lene glycol was registered after having used a spe-


cific 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 con-

tained propylene glycol (38). A similar situation oc-

curred in a 40 year old patient who developed pru-

ritus, erythema, erosions and edema on glans and

prepuse 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 prepara-

tion was registered as well as to chlorhexidine glu-

conate (39).

A 30 year old male always got dermatitis on

his penis, scrotum, and lower abdomen after the in-

tercourse with one of his girlfrends. 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 hygie-

nic 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 re-

sults, the treatment was changed and the rash subs-

ided (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

appeared 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 con-

doms and spermicides can produce ACD in sensitive

men and women. Women can get vulvitis and vag-

initis while men can get balanitis. It is recom-

mended to use nonrubber condoms or some other

material underneath (41).

A 22 year old male had erythematous edema-

tous dermatitis corpus on the penis and balano-

posthitis several hours after the intercourse. He used

condoms. Testing proved allergic reaction to thiura-

m mix and benzocaine. Benzocaine was incorporated

in the gel used for the enhancement of the sexual in-

tercourse (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 fa-

miliar 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

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 con-

tained propylene glycol (38). A similar situation oc-

curred in a 40 year old patient who developed pru-

ritus, erythema, erosions and edema on glans and

prepuse 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 prepara-

tion was registered as well as to chlorhexidine glu-

conate (39).

A 30 year old male always got dermatitis on

his penis, scrotum, and lower abdomen after the in-

tercourse with one of his girlfrends. 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 hygie-

nic 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 re-

sults, the treatment was changed and the rash subs-

ided (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

appeared 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 con-

doms and spermicides can produce ACD in sensitive

men and women. Women can get vulvitis and vag-

initis while men can get balanitis. It is recom-

mended to use nonrubber condoms or some other

material underneath (41).

A 22 year old male had erythematous edema-

tous dermatitis corpus on the penis and balano-

posthitis several hours after the intercourse. He used

condoms. Testing proved allergic reaction to thiura-

m mix and benzocaine. Benzocaine was incorporated

in the gel used for the enhancement of the sexual in-

tercourse (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 fa-

miliar 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 paraphenylenediamine 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. Androgy nous 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, tiocortol 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.
References


35. Wilkinson DS. Conubial photodermatits. Contact Dermatitis 1975;1(1):58. [CrossRef]


39. Barraza V. Connubial allergic contact balanitis due to chloroxidine. Contact Dermatitis 2001;45(1):42. [CrossRef][PubMed]
KONTAKTNII DERMATITIS – PREGLED LITERATURE SA KONUBIJALNIM TIOPM U FOKUSU

Mirjana Paravina, Marija Nedeva, Lazar Bajić

Univerzitet u Nišu, Medicinski fakultet, Niš, Srbija

Kontakt: Mirjana Paravina
Majakovskog 40/3, 18000 Niš, Srbija
E-mail: mirjanaparavina@gmail.com

Kontaktni dermatitis (KD) je akutna ili hronična inflamacija kože, koja nastaje uzgozene 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 neezgazmatoznim varijantama) i fotoreaktivni KD (fototoksični i fotoaergijski). 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 mogućnosti ga ukloniti. Konubijalni dermatitis često ostaje neprepoznat, što stvara poteškoće u lečenju.


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

This work is licensed under a Creative Commons Attribution 4.0 International (CC BY 4.0) Licence