

# Gynecological disorders and eruptions on the skin of face in ascariasis

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## Abstract

Skin pathologies are known to reflect various disorders of the gastro-intestinal tract. Problem of interrelations between bacterial vaginitis, disbacteriosis of the digestive organs and skin status has still remained a lot to elucidate. In our research, 50 female patients with eruptions on the skin of the face and the chin, who sought for medical advice at the gynecologist's because of discharges from vagina, were investigated for helminthism. On examination, eggs of ascarids were detected in 46 patients, cysts of lamblia – in 13 cases, and various disorders of the gastro-intestinal tract – in all of the assessed. Obtained findings permit to conclude on the relevance of characteristic acne rash on the skin of the face to ascariasis; ascariasis is a cause of vaginal disbacteriosis; in bacterial vaginitis not only vaginal microscopy is necessary to conduct, but analysis of feaces for eggs of ascarids and other helminths as well; patients with gynecological pathologies and eruptions on the skin of the face, should be recommended undergo gastroenterological examination for disbacteriosis of the digestive organs.

## INTRODUCTION

Interrelation of bacterial vaginitis, dysbiosis of the digestive organs and skin status belong to those medical problems which have so far remained much to elucidate. Condition of integumentum, in particular skin, is known to reflect functional status of the internal organs and their pathologies. In research works of the past years it was established the interrelationship of chronic constipations, pathologies of liver and bile ducts with the condition of skin [2,4, 10]. Thus, chronic disorders of liver and bile ducts are associated with the appearance of spots, teleangiectases and petechiae on the skin, which in persisting lamblia infestation become more pronounced. Different eruptions, especially, on the skin of face are initial signs of gastrointestinal disorders [6,11,15, 17]. Rash on the skin, primarily acne, is a most common complaint of female patients of the reproductive age who seek advice of cosmetologist, dermatovenerologist and gynecologist. Acne is not a purely dermatological problem but evidence of a chronic persisting infection with the dissemination risk over other organs – kidneys, tonsils, heart etc. [7, 8,9].

Among symptoms of a rather high incidence in young women which make them seek for gynecological aid are specific smell and discharges from the vagina. On medical examination, most often detected in these cases are candidal

colpitis and bacterial vaginitis caused by Gardnerella, Mobiluncus and cocci. Dysbacteriosis of vagina or bacterial vaginitis is not a separate pathology but a manifestation of dysbiosis, first of all, of the organs of gastro-intestinal system [6].

In patients with vaginal dysbiosis were detected chronic pathologies of the gastro-intestinal tract – chronic gastritis, ulcerative disease of the stomach and duodenum, chronic cholecystitis or pancreatitis, and chronic colitis with the clinical picture of constipation [1,3,11,16].

Specific rash on the chin and lower parts of the cheeks with periodical eruptions before menses, after nervous overstrain or overeating may suggest presence of helminthic infestation. These signs are not always paid due attention to by family physicians, general practitioners, and gynecologists. Women often seek for the aid of cosmetologists and become their patients for the rest of life.

Objective of the research was to determine dependence of the rash on the skin of face upon presence of helminthic invasion in female patients.

## MATERIAL AND METHODS.

Fifty women, aged 18-47, with the rash localized on the skin of face and cheeks, who sought gynecological aid for discharges from vagina, were examined and assessed. All of

them suffered from various diseases of the gastro-intestinal tract: chronic gastritis, dyskinesia of biliferous ducts, uncerative disease of the stomach and duodenum, chronic constipations, hemorrhoids. Control group were 20 females, aged 17-45, without rash on the face and pathologies of the urogenital system or digestive organs. The group under study consisted of 30 patients with the skin of the face affected by acne, in whose faeces were detected eggs of helminths and ascarides.

Medical examination of both groups included: total blood assay, general urinalysis, blood test for RW, coagulogram, tests of bilirubin, urea, total albumin, blood sugar, laboratory analysis of faeces for eggs of helminths, USD of the organs of small pelvis; and, if indicated by USD findings, liver, pancreas and gall bladder were also investigated. All patients with eruptions on the face were examined by dermatologist, scrapings for demodex were taken, and acne content was inoculated for bacteriological investigation and sensitivity to antibiotics.

All patients underwent gynecological examination, during which smears from urethra, cervical canal and posterior vault of vagina, and smears for histological test were taken, colposcopy conducted, and, if indicated, biopsy of the neck of uterus and curettage of the cervical canal performed.

Obtained results were processed statistically and Student's t-criterion determined.

**RESULTS AND DISCUSSION**

Total blood assay showed that in the assessed group inflammatory changes were absent: ESR and leucocyte count were within the limits of normal indexes, and neither eosinophilia, nor leucocyte formula shift to the left were detected. General urinalysis revealed eggs of helminths in 4 cases (8%), residual albumin was found out in 15 cases (30%) at the background of oxaluria.

In 46 of the assessed (92 %, p < 0.05) were detected ascarides in the faeces, of them, in 13 cases (28 %) were found cysts of lamblia. Indexes of coagulogram, bilirubin, urea, and blood sugar revealed absence of pathologies. USD showed disorders of the gall bladder in 28 cases: chronic cholecystitis, cholecystopancreatitis, cholestasis, and volvulus of the gall bladder. Data of gynecological examination are listed in Table 1.

**Figure 1**

Table 1 : Gynecological disorders in patients with eruptions on the face

Identified pathologies	Number of cases	%
Postpartum ectopy	6	12
Endocervitis, exocervitis	17	34
Pseudoerosion of the uterus	14	28
Dysplasia of the uterine neck of degree I-II verified histologically	6	12
Chronic bilateral salpingo-oophoritis	13	26
Chronic unilateral salpingo-oophoritis	9	18
Endometriosis of the neck of uterus, adenomyosis	10	20
Myoma of the uterus	2	4
Peritoneal adhesions	2	4
Nodular mastopathy	4	8
Diffuse mastopathy	8	16
Colpitis	4	8

Data of gynecological examination in female patients with the rash on the face permit us to state that in 86 % cases (p < 0.05) their reproductive system was affected by inflammatory disorders of varying manifestability. Data of smear microscopy are listed in Table 2.

**Figure 2**

Table 2: Changes detected on smear microscopy in patients with ascariasis-induced eruption

Identified changes	Number of cases	%
Candidal colpitis	11	22
Bacterial vaginitis	10	20
Trichomoniasis	6	12
Trichomoniasis + chlamydiosis	4	8
Mixed coccal flora	17	34

As can be seen from Table 2, most common were pathologies: candidal colpitis, bacterial vaginitis and coccal flora in different proportions.

Test for démodéx was positive in 6 cases (12 %) and relevant dermatological treatment was administered as required.

Ascariasis is the most common helminthic infestation all over the world. Its causative agent is roundworm *Ascaris lumbricoides*. Mature individual is spindle shaped, of white or yellowish colour. Male helminth is 15-25 cm and female – 25-40 cm in length, 3-6 cm thick. Human host with male and female ascarides parasitizing in his intestines is the only source of infestation. Mature female can lay up to 245,000 eggs a day. Immature eggs of helminths are evacuated with faeces into the environment and in favourable conditions larva inside the egg matures within 9-42 days at the optimal temperature of 24-30°C. Mobile larva becomes invasive. Infestation results from ingestion of mature eggs of helminths contained in soil particles on the contaminated food, mainly fruits and vegetables, which thereby gain entrance into the alimentary canal of human host [12].

In the small intestine, larvae leave mature eggs and through the intestinal wall penetrate into blood vessels. Then by the blood stream, larvae are carried to the liver and lungs (migratory stage lasting 6-8 weeks), they may also reach brain, eyes and other organs (Fig. 1). In the lungs larvae can unhindered enter alveoli and bronchioles and move along bronchi via the ciliated epithelium to the stomatopharynx where they are ingested with the sputum. Having re-entered intestines, larvae become mature in 70-75 days (intestinal stage, 8 weeks after infestation). Mature helminths live for a year then die and are evacuated with faeces [5].

Manifestations of ascariasis depend upon localization of helminths. Clinical course of ascariasis has two phases: early (migratory) and late (intestinal). Manifestations of the migratory phase are inconsiderable. Signs of the onset of infestation include pronounced weakness and dry or productive cough, with small amounts of mucous sputum. Body temperature is usually normal or subfebrile (to 38°C). Eruptions on the skin in the form of urticaria or small vesicles with clear content are localized on the hands and feet. Radiography of the lungs reveals round, stellate, multi-angular infiltrates which can be both solitary and multiple.

Course of intestinal phase of ascariasis is almost asymptomatic. Patients usually complain of increasing fatigue, loss of appetite, general malaise, nausea, vomiting, and pains in the abdomen. Spasmodic pains appear in the epigastral region, around umbilicus or in the right lower part of the abdomen. Some patients may have diarrhea, others – constipation and there are cases of diarrheas alternating with constipations. Impact exerted by ascariasis on the nervous system is displayed by headaches, dizziness, enhanced mental fatigue. Signs of affection of the nervous system also include interrupted sleep, night terrors, seizures of dizziness, attacks of hysteria, and convulsions. Helminthic infestation can induce ophthalmic disorders: mydriasis, Hutchinson's pupil, photophobia, and reduced acuity of vision. Hypotension may develop in some cases as a manifestation of ascariasis impact on the cardiovascular system. Presence of ascarides in the intestines may result in development of bronchitis and bronchial asthma. Complications of ascariasis include: intestinal obstruction (obturation of intestinal lumen with a tangle of ascarides); ascariasis-induced appendicitis; ascariasis of the liver and bile ducts (cholangiohepatitis); inflammation of biliferous ducts – purulent cholangitis and multiple abscesses of the liver; ascariasis of the pancreas with the development of acute pancreatitis; asphyxia in case ascarides have passed into the respiratory tracts [13].

Ascariasis-induced rash, although a specific symptom of helminthic infestation, has not been so far described in the medical literature. It is localized on the chin and lower parts of cheeks, being characterized by regular appearance of new eruptions before menses, after nervous overstrain and overeating. This symptom has become possible for me to determine on the basis of comparative assessment of female patients' complaints of rash, its localization and time of appearance as well as detection of ascarides eggs in their faeces and urine. Some patients underwent immunological investigation for antibody titres to ascarides in the blood. Disorders of the gastro-intestinal system were diagnosed in all of these patients.

The status of immune system is not always adequately assessed while administering immunocorrectors and immunomodulators. Potent antibiotics always exert an immunosuppressive effect on the organism. Exhaustion of the immune system is associated with recurrent inflammatory diseases of the urogenital system, anginas, chronic bronchitis, maxillary sinusitis. Allergic reactions are also a manifestation of impaired immunological balance in the organism [Fig.1, 2]. It is not a rare case, when on examination of female patients for latent infections, a likely possibility of helminthiasis is overlooked. Vital activity of parasites within the human organism not only exhausts immunity of a host but makes it irresponsive to these hostile factors. At that, parasites take off the best of food components since they pass to them sooner than into the blood stream. They discharge toxic substances and excrete waste products into host's organism that causes inhibition of immune system.

Hence, presence of a specific ascariasis-induced rash on the skin of face in female patients has to be taken into consideration as a factor indicative of helminthic infestation and this will allow obstetrician-gynecologist to verify diagnoses and deliver relevant treatment. Effective and inexpensive investigation of female patients for helminthiasis will contribute to the improvement of patients' health status preventing from additional medicamentous load on their organism.

## **CONCLUSIONS**

1. Specific rash on the skin of face in female patients is directly related to presence of ascariasis.
2. Ascariasis leads to development of vaginal dysbiosis.

3. Medical examination of female patients with vaginal dysbiosis must include not only microscopy of vagina but also laboratory analysis of faeces for ascarides or eggs of helminths.
4. Dysbiosis of vagina may be associated with dysbiosis of digestive organs, hence the necessity of gastroenterological investigation to be conducted in this cohort of female patients.

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