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ORIGINAL

The relationship between coronal sulcus lymphangitis and IgE

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Abstract
Objectives: To investigate whether there is a link between serum IgE levels in patients having diagnosis of coronal sulcus lymphangitis and this disease.
The patients and method: The patients have been diagnosed clinically. The time of symptoms' existence, allergy history and the history of a traumatic sexual relationship or masturbation have been investigated. The serum total IgE levels have been measured.
Results: The study includes 27 patients. All patients have been diagnosed clinically. The age average is 36 (22–54). The time between the last sexual relationship or masturbation and the emergence of the symptoms is averagely 3 days (1–10). The symptoms emerged in shorter than 24 h in 6 patients. The symptoms emerged statistically earlier in patients having a traumatic sexual relationship or masturbation history (p: 0.0046). The level of serum IgE was over the threshold value in 8 patients (30%). The symptoms emerged statistically later in patients having high IgE level (p: 0.0004).
Conclusions: The immunologic, traumatic and infectious reasons are responsible for the etiology of the coronal sulcus lymphangitis. In this study, the rate of the patients considered to be having immunologic reasons has been found as 30%.

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PALABRAS CLAVE
Linfangitis;
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Relación entre la linfangitis del surco coronario y la IgE

Resumen
Objetivo: Investigar si existe una relación entre los niveles séricos de IgE en pacientes diagnosticados de linfangitis del surco coronario y este resultado.
Pacientes y métodos: Los pacientes recibieron un diagnóstico clínico. Se investigaron la duración de los síntomas, antecedentes de alergias o de traumatismos durante el coito o la masturbación. Se midieron los niveles totales de IgE.
Resultados: Se incluyeron 27 pacientes en el estudio. Todos habían recibido un diagnóstico clínico. La media de edad fue de 36 (22-54). El tiempo transcurrido desde la última relación sexual o masturbación y la aparición de los síntomas de 3 días de media (1-10). Los síntomas surgieron en menos de 24 horas para 6 pacientes. Los síntomas aparecieron antes de manera estadísticamente significativa en aquellos pacientes con antecedentes de coito o masturbación traumáticos (p: 0,0046). El nivel de IgE en sangre fue superior al valor de referencia en 8 pacientes (30%). Los síntomas aparecieron más tarde con significación estadística en los pacientes con niveles de IgE altos (p: 0,0004).
Conclusión: Existen motivos inmunológicos, traumáticos e infecciosos que ocasionan la linfangitis del surco coronario. En el presente estudio se considera que la tasa de pacientes que contaban con motivos inmunológicos ascendía al 30%.

Introduction

The spongiosis substance of penis creates glans penis by extending in the most distal section and sits on the cavernous substances in shape of hat. The area in 8–10 mm seen as a gutter between the proximal limit of glans penis and cavernous substances is called as coronal sulcus. Coronal sulcus is covered with preputium. In uncircumcised individuals the inside folium of preputium covers this area and the proximal limit cannot be determined clearly. But in circumcised individuals the line of circumcise incision shows the proximal limit of the coronal sulcus. The inside folium of preputium filling the area between this line and glans gains leather aspect in time by being keratinized.

The lymphatics of penis skin range from distal to proximal and are drained to inguinal lymph nodes. The lymphatics in this area have an important role in regulating the tissue pressure and immune response like other lymphatic in the body. Some changes are observed in pathologic situations like trauma, infection, inflammation. One of these pathologic situations is lymphangitis.[1–3]

The coronal sulcus lymphangitis holds the lymph channels in this area and it is a rarely seen situation. It is also called as nonvenereal sclerosant lymphangitis of penis, nonvenereal sclerosant lymphangitis of coronal sulcus, circular endure lymphangitis, penis lymphangiectasia and temporary lymphangiectasia of penis. The traumatic, infectious and allergic reasons are emphasized in its etiology.[4–6]

It is seen in situations like the high level of serum total immunoglobulin E (IgE), immune deficiency, viral and parasitary diseases, variable malignancies. Also it generally becomes a sign of allergic reaction in patients when these situations are excluded.[7]

In this study the serum total IgE levels were measured in patients diagnosed with coronal sulcus lymphangitis clinically and the frequency of the allergic etiology was investigated.

The patients and method

27 patients who came to our polyclinic in two years with complaints of swelling or pain in penis distal and were diagnosed with coronal sulcus lymphangitis have been included in this study.

The patients having immune deficiency, parasitary disease, viral disease and malignancy history were excluded from this study.

After the sexual and allergic history of the patients was questioned, their physical examinations were made and they were diagnosed clinically. Then their serum total IgE levels were measured by means of electrochemiluminescent immunoassay-ECLIA (Roche, Indianapolis, ABD) method. While the serum total IgE level under the 100 ng/ml was accepted normal, the values over this threshold were accepted as pathologically.

In statistical studies, the time between the last sexual relationship or masturbation and emergence of symptoms was evaluated. With this aim two comparisons were made.

In the first one, the patients having or not having trauma history, and in the second one the patients having or not having high IgE levels were compared. The Mann–Whitney test was used as a statistic test. The calculated p value less than 0.05 was accepted as significant.

The findings

The average age of the patients was 36 changing between 22 and 54. 21 of the patients (78%) were married. The time between last sexual relationship or masturbation and

emergence of the symptoms changed between 1 and 10 days and it was averagely 3 days.

No history of malignancy, immune deficiency, parasitary disease and viral disease was detected.

When the sexual history was questioned it was detected that 6 patients (22%) defined traumatic sexual relationship or masturbation. The symptoms in these 6 patients emerged in less than 24 h. That the emergence time of symptoms in these patients was shorter when compared to the other patients was found significant statistically (p: 0.0046).

When allergic history was questioned it was observed that 5 patients (19%) had allergic history known before. Four of these patients had spice allergy and one of them had contrast material allergy. In none of them latex allergy history was detected. Only in one of the patients the clinic table repeated two times. These patients had spice allergy known before and he stated that he experienced this situation two times when he ate sugar containing spicy mix.

When the total IgE levels were evaluated it was observed that the blood levels were over threshold in 8 patients (30%). Only two of these eight patients had allergy history known before. And two patients had spice allergy. One of these patients was the one who experienced this situation two times. That the emergence time of the symptoms were longer in patients having high level of total IgE when compared to the other patients was found significant statistically (p: 0.0004).

In none of the six patients that defined traumatic sexual relationship, the total IgE level was found over the threshold value.

Figure 1 A coronal sulcus lymphangitis case occurred due to traumatic reasons.

Discussion

The coronal sulcus lymphangitis is a rarely seen disease that holds lymphatics in the distal section of the penis skin. The publications made about this disease in literature involve the case reports of one or more patients. There are not comprehensive patient series or clinic studies.

The disease is generally observed in patients aged 20–40 who are active in terms of sexuality and it is considered that trauma, infection and allergy play role in its etiology.[8,9]

The most detected reason is traumatic sexual relationship and also traumatic masturbation can cause this disease. There are not histories of traumatic masturbation or sexual relationship in most of the cases in literature. Generally the clinic symptoms emerge within the first 24–48 h after the trauma.[10,11]

Infectious reasons are observed less. This situation generally occurs when saprophyte or pathogen microorganisms in the skin reach the subcutaneous lymphatics during a traumatic masturbation or sexual relationship. Also it should not be forgotten that the sexual relationship with infected partner can cause coronal sulcus lymphangitis. In infectious cases the erythema is more distinct and in some cases balatinis can also oocur.[12–14]

Allergic reasons can also be considered in etiology of the disease. There are studies about this issue and exposure to the local or systematic allergens can create this situation theoretically. The latex and lubricants in the preservatives and the substances in the retarding gels are possible allergens. Also the materials that the sexual partner use through vaginal way can have allergen effect.

While allergic reactions against some sulphonamides occur in only genital area, another allergens can create reaction in this area likewise.

As clinical course of coronal sulcus lymphangitis can differ for circumcised and uncircumcised individuals due to varying of lymphatic drainage. As the lymphatic drainage capacity is higher in uncircumcised individuals, a mild edema or sensitivity that hold coronal sulcus partly or totally is observed. In circumcised individuals as the lymphatic drainage has lower capacity from the circumcise incision line in shape of circular, a more distinct edema and sensitivity occur in distal of the incision line. The edema can be severe sometimes and it may surround the coronal sulcus like a circular balloon. In some cases the lymph channels in the penis dorsal may be palped and even they may be visible (Fig. 1). In cases complicated with infection the sensitivity and swelling may occur in inguinal lymph nodes[12] (Fig. 2).

The diagnosis is made clinically.[12] Also it is important to question patients in terms of trauma and allergy. The clinic picture recovers spontaneously in a few days in uncircumcised individuals and in a week in circumcised ones. The creams containing steroid in low rate can fasten the recovery. In infected cases the antibiotic treatment should be applied too.

Also in diagnosis of the disease, the chronic granulomatous lymphangitis, syphilis lesion and coronal sulcus phlebitis should be considered.[15,16] The most important difference of the chronic granulomatous picture is that the disease last longer. It should not be forgotten that this clinic entity can accompany Crohn disease in the young and abdominal and pelvic malignancies in old people.[6] The primer and secondary syphilis lesions can be confused with

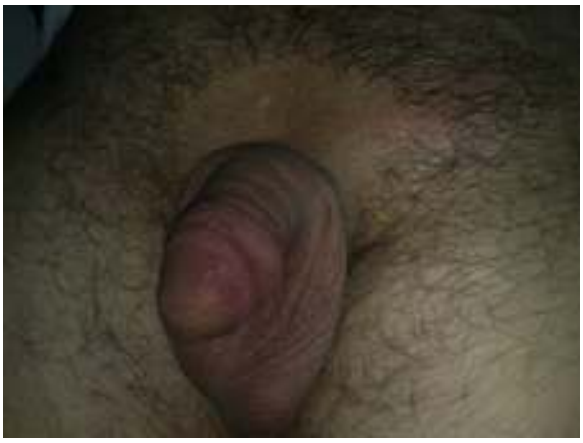

Figure 2 The balanit and inguinal lymphadenitis accompany the coronal sulcus lymphangitis case due to infectious reasons.

coronal sulcus lymphangitis. In suspicious cases the serologic tests and diagnosis should be certainly made. In differential diagnosis of phlebitis, attentive physical examination has an important role. In suspicious cases, the penile Doppler ultrasonography can be helpful in differential diagnosis.[16]

Even though the coronal sulcus lymphangitis is a rarely seen disease, in two years 27 patients have been diagnosed with this disease in our unit. And this constitutes 0.4% of the all policlinic patients. There may be two reasons of why more diagnoses are made in our unit. First reason is that almost all men in Turkey are circumcised and the disease is clinically more distinct in circumcised individuals. The other reason is that the disease emerges suddenly and it can spontaneously recover in a short time. Especially as the disease recovers faster in uncircumcised individuals, the patients may desist from going to a health institution.

The average age in this study is 36 and 74% of the faults take place between the ages of 20 and 40. This finding is compatible with the information that states this disease is more common among the patients who are active in terms of sexuality.

The clinic findings of six patients who have traumatic sexual relationship and masturbation history emerged within 24 h. When compared to the patients who have no trauma history, it was seen that the symptoms emerged earlier meaningfully in patients having a trauma history. This finding can also be the evidence of that there is a relation between traumatic sexual relationship or masturbation.

When the total IgE levels of the patients are taken into account; it is seen that the symptoms in patients having high levels of IgE emerge meaningfully later than other patients. This finding can be the evidence of that in patients having high level of IgE, there is not a relation between the emergence of the disease and sexual relationship or masturbation. These patients may confront with allergen to which they are sensitive any time and a clinic picture may occur.

The total IgE is not sign of an allergic case by itself. But when situations like parasitary and viral diseases and malignancy that cause high level of IgE are excluded this may be indicative of an allergic case. That IgE is higher in 30% of the patients with coronal sulcus lymphangitis can be a clue about the allergic etiology. Examining the patients in detail immunologically in the studies to be done in the future will clarify this issue. Also our patient who has spice allergy history and experienced this allergen two times and diagnosed with coronal sulcus lymphangitis may be starting point for the studies to be planned in the future.

As a result, the coronal sulcus lymphangitis is seen more common than stated in the literature. There are traumatic, infectious and allergic reasons in its etiology. The trauma and infection clinic is clearer. The IgE levels may be a rough sign in patients for whom the allergy is reason for its etiology. But further studies are necessary for clarifying the allergic etiology.

Ethical disclosures

Protection of human and animal subjects. The authors declare that the procedures followed were in accordance with the regulations of the responsible Clinical Research Ethics Committee and in accordance with those of the World Medical Association and the Helsinki Declaration.

Confidentiality of data. The authors declare that they have followed the protocols of their work centre on the publication of patient data.

Right to privacy and informed consent. The authors must have obtained the informed consent of the patients and/or subjects mentioned in the article. The author for correspondence must be in possession of this document.

Conflict of interest

The authors declare no conflict of interest.

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