CASE

82-year-old woman presented to the family medicine clinics with a complaint of erythema and itching on umbilical region that had been present for the past 15 days. The patient said that the lesion worsened for last 3-4 days and red, hot, tender swelling in and around the umbilicus had occurred. She did not recognized any similar skin lesion in any part of her body. No medical care received before for this complaint. She had hypertension history. On physical examination, there was a fairly well-defined, 4x7cm reddish-brown, hot, mildly erythematous skin lesion in and around umbilicus (Figure 1). The patient was asymptomatic except this lesion and we couldn’t determined any other abnormal finding except Body Mass Index which was 31kg/m² and TA: 180/90 mmHg. The other tests carried out, including full blood count, C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR), were all within the normal range.

Question

Which one of the following is the correct diagnosis, based on the patient's history and physical examination?

A. Tinea Corporis  
B. Primary irritane dermatitis  
C. Atopic Dermatitis  
D. Seboreic Dermatitis  
E. Intertrigo

Figure 1. Skin lesion on umbilical region
Discussion

The answer is B: Primary irritant dermatitis

Primary irritant dermatitis

It is an exanthematous reaction of the skin caused by direct contact of toxic irritant substances. Between agents that leads to an inflammatory reaction of the skin is often harsh soaps, bleaches, detergents, acids, alkalis, saliva, sweat and urine take place. As there is no need sensitization, it may occur even after the first contact which differs it from atopic dermatitis.

The presented case can be evaluated as umbilical dermatitis as a version of primary irritant dermatitis. Umbilical dermatitis is a common condition in adults which is frequently becomes secondarily infected with skin organisms (bacteria or tinea). It is usually associated with inadequate hygiene and deepening of umbilical cord caused by obesity.

Clinical manifestation is mostly occurs result of collection of particules of cotton clothes in the umbilicus. These particules causes a foreign body reaction and chronic inflammation. This chronic inflammation causes erosion of the skin area and secondary candidal or bacterial infections.

If the infection spreads into the subcutaneous tissues and the opening of the umbilicus becomes narrowed by oedema, the whole umbilicus can turn into an abscess. Most umbilical abscesses are associated with omphololiths.

The clinical diagnosis rests upon the finding of a red, hot, tender swelling in and around the umbilicus which exudes pus.

In the treatment; cotton buds with batticon are turned clockwise one or two tours (in the same direction) in the umbilicus to clean the skin then topical steroid+antibacterial or steroid+antimicotic pomads are used. Hydrating the skin reduces the fissures.

In our case we used steroid+antibacterial pomad and there was a serious healing after 5 days (Fig. 2) and 10 days (Fig. 3).

Differential Diagnosis

Tinea corporis

Tinea corporis is a superficial dermatophyte infection characterized by either inflammatory or noninflammatory lesions on the glabrous skin (ie, skin regions except the scalp, groin, palms, and soles). Three anamorphic (asexual or imperfect) genera cause dermatophytoses: Trichophyton, Microsporum, and Epidermophyton.

It is a common infection more often seen in typically hot, humid climates which affects persons of all age groups, but prevalence is highest in preadolescents. Tinea corporis secondary to tinea capitis typically occurs in children because tinea capitis is more common in this population.

Dermatophytes preferentially inhabit the nonliving, cornified layers of the skin, hair, and nail, which is attractive for its warm, moist environment conducive to fungal proliferation.

Symptoms, contact history, recent travel, and international residence are relevant clues in the history of a person with tinea corporis.

Some patients can be asymptomatic. A pruritic, annular plaque is characteristic of a symptomatic infection. Patients occasionally can experience a burning sensation. Immunocompromised patients may develop severe pruritus or pain.

Contact with infected humans, animals,
inanimate objects or the history of occupation (eg. farm worker, zookeeper, laboratory worker, veterinarian), environment (eg. gardening, contact with animals), or recreation (eg. contact sports, contact with sports facilities) are important for etiology.

**Atopic dermatitis**

Atopic dermatitis (AD) is a pruritic disease of unknown origin that usually starts in early infancy (an adult-onset variant is recognized); it is characterized by pruritus, eczematous lesions, xerosis (dry skin), and lichenification (thickening of the skin and an increase in skin markings).

AD may be associated with other atopic (immunoglobulin E [IgE]–associated) diseases (eg, acute allergic reaction to foods, asthma, urticaria and allergic rhinitis).

Incessant pruritus is the only symptom of atopic dermatitis, children often scratch themselves uncontrollably. Although pruritus may be present in the first few weeks of life, parents become more aware of the itch as the itch-scratch cycle matures when the patient is aged approximately 3 months. The disease typically has an intermittent course with flares and remissions occurring, often for unexplained reasons.

Usually there is a family history of atopic diseases. Symptoms generally begin in childhood and decrease as the child grows up. In the infancy the lesions usually appears on the cheeks. In childhood frequently it is seen in extremities (the front of the elbows, back of the knees, neck, axilla and inguinal region) and itching is the main symptom in atopic dermatitis. The dryness of the skin is common which increases the risk of exema. There is a tendency to fungal and viral skin infections in atopic dermatitis.

**Seborrheic dermatitis**

It is a common skin disorder that mainly affects scalp, causing scaly, itchy, red skin and stubborn dandruff. It is a papulosquamous disorder patterned on the sebum-rich areas of the scalp, face, and trunk. It is commonly aggravated by changes in humidity, changes in seasons, trauma (eg. scratching), or emotional stress. The severity varies from mild dandruff to exfoliative erythroderma.

The usual onset occurs with puberty. It peaks at age 40 years and is less severe, but present, among older people.

Seborrheic dermatitis is thought to be due to a combination of an over production of skin oil and irritation from a yeast called malassezia.

Seborrheic dermatitis appears to run in families. Stress, fatigue, weather extremes, oily skin, infrequent shampoos or skin cleaning, use of lotions that contain alcohol, skin disorders (such as acne) or obesity may increase the risk.

Neurologic conditions, including Parkinson's disease, head injury, and stroke may be associated with seborrheic dermatitis. Human immunodeficiency virus (HIV) has also been linked to increased cases of seborrheic dermatitis.

Besides an itchy scalp, patients may complain of a burning sensation in facial areas affected by seborrhea. If left untreated, the scale may become thick, yellow and greasy and, occasionally, secondary bacterial infection may occur.

Seborrheic dermatitis is a chronic (life-long) condition but can be controlled with treatment. It often has extended inactive periods followed by flare-ups.

Hygiene issues play a key role in controlling seborrheic dermatitis. Frequent cleansing with soap removes oils from affected areas and improves seborrhea. Pharmacologic treatment options for seborrheic dermatitis include antifungal preparations (selenium sulfide, pyrithione zinc, azole agents, sodium sulfacetamide and topical terbinafine) that decrease colonization by lipophilic yeast and anti-inflammatory agents (topical steroids).

**Intertrigo**

Intertrigo is an inflammatory condition of skin folds, induced or aggravated by heat, moisture, maceration, friction, and lack of air circulation which is usually appears red and raw-looking, and may also itch, ooze, and be sore. Intertrigos occur more often among overweight individuals, those with diabetes, those restricted to bed rest or diaper use, and those who use medical devices, like artificial limbs, that trap moisture against the skin.

It is usually seen in axilla, abdominal and
genitofolds, under the breast. It is usually infected with bacteria, fungi or viruses, however most common cause is candida. It is frequently worsened or colonized by infection, which most commonly is candidal but also may be bacterial, fungal, or viral. Intertrigo commonly affects the axilla, perineum, inframammary creases, and abdominal folds.

The exact pathogenesis is unknown but friction and erosion of the skin causes high temperature of the skin and low air flow areas of the body (folds) gets inflamated. As the time passes secondary infection risk increases.

Age, obesity, diabetes, incontinence, immobilization, bed hygiene, malnutrition, macromastia, increase the risk.

In the treatment, zinc oxide barrier creams, weak potency topical steroids (when inflammation is dominated), topical antifungal agent if it is caused by fungi and when it is not sufficient systemic antifungal agents are used.

Table 1. Summary of differential diagnoses

<table>
<thead>
<tr>
<th>Disease</th>
<th>Description</th>
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<tbody>
<tr>
<td>Tinea corporis</td>
<td>Characterized by either inflammatory or noninflammatory lesions on the glabrous skin. Seen in every age. A pruritic, annular plaque is characteristic of a symptomatic infection. Patients occasionally can experience a burning sensation.</td>
</tr>
<tr>
<td>Atopic dermatitis</td>
<td>Characterized by pruritus, eczematous lesions, xerosis (dry skin), and lichenification. The dryness of the skin is common which increases the risk of exema. Sensitization is necessary. Frequent seen in childhood.</td>
</tr>
<tr>
<td>Seborrheic dermatitis</td>
<td>A papulosquamous disorder patterned on the sebum-rich areas. Mainly affects scalp, causing itchy, red skin and stubborn dandruff. It is commonly aggravated by changes in humidity, changes in seasons, trauma (eg. scratching) or emotional stress. It peaks at age 40 years.</td>
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<tr>
<td>Intertrigo</td>
<td>An inflammatory condition of skin folds, induced or aggravated by heat, moisture, maceration, friction, and lack of air circulation which is usually appears red and raw-looking and may also itch, ooze and be sore. Occur more often among overweight individuals. It is usually seen in axilla, abdominal and genitofolds, under the breast.</td>
</tr>
<tr>
<td>Primary irritane dermatitis</td>
<td>An exematous reaction of the skin caused by direct contact of toxic irritane substances. There is no need of sensitization. The clinical diagnosis rests upon the finding of a red, hot, tender swelling in and around the umbilicus or effected region which exudes pus.</td>
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References


2. Tepe B. [Evaluation of intertrigo agents with direct preparation, wood light and culture methods]. İnönü University Medical School, Dermatology Department. 2008; (Licence Research). (In Turkish)

3. Tüzün Y., Savaşkan H, Kocağyan A, Aydemir EH, Mat MC, Serdaroğlu S. [Advances in Dermatology]. İstanbul University Cerrahpaşa Medical School, Dermatology Department and Skin and Venerial Diseases As, İstanbul, 1991, p25. (In Turkish)


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