Case Report
Olgu Sunumu

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Four cases, one syndrome: Gardner-Diamond syndrome

Dört olgu, bir sendrom: Gardner-Diamond sendromu

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Abstract

Gardner-Diamond syndrome (GDS) is a condition characterized by the appearance of unexplained ecchymosis on the skin. Other common symptoms include gastrointestinal complaints, such as abdominal pain and vomiting, as well as complaints about the nervous and musculocutaneous systems. We typically diagnose GDS by ruling out other potential causes, as the exact cause remains unknown. Middle-aged women mostly suffer from this disease, which is believed to have a strong psychological component in its cause. Despite the limited number of documented cases of GDS globally, our goal is to showcase four confirmed cases of the disease.
Keywords: Ecchymosis, Gardner-Diamond, psychogenic purpura, autoerythrocyte sensitization, bruise

Öz

Gardner-Diamond sendromu (GDS), deride açıklanamayan morlukların varlığıyla belirgin bir hastalıktır. Diğer yaygın belirtiler arasında karın ağrısı ve kusma gibi gastrointestinal şikayetler ile sinir ve kas-deri sistemlerine ilişkin şikayetler bulunur. GDS'nin kesin nedeni bilinmemektedir ve genellikle diğer potansiyel nedenleri dışlamak ile tanı konur. Bu hastalığın, etiyolojisinde psikolojik bileşenin güçlü olduğu ve çoğunlukla orta yaşlı kadınlarda görüldüğü bilinmektedir. Dünya genelinde sadece birkaç yüz olgu rapor edilmiş olmasına rağmen, bu makalede kısa zaman aralıklarıyla GDS olarak teşhis edilmiş dört olgu sunmayı amaçladık.
Anahtar Kelimeler: Ekimoz, Gardner-Diamond, psikojenik purpura, otoeritrosit sensitizasyon, morluk

Introduction

Gardner-Diamond syndrome (GDS), also known as psychogenic purpura or autoerythrocyte sensitization syndrome, is a rare skin disorder characterized by recurrent bruising that occurs spontaneously, usually on the extremities, without any known cause of injury. The condition often appears after emotional distress[1].

The major symptom is recurrent painful ecchymosis, which cannot be explained by biopsy[2]. A microscopic examination of the lesions reveals a small amount of lymphocytic infiltration and red blood cells leaking out of the blood vessels. There is no evidence of vasculitis, abnormal blood vessel changes, inflammation of fat tissue, or foreign body[3]. In GDS, ecchymosis typically affects the arms and legs, but it can also affect any part of the body[4]. In the GDS, the bruised areas turn yellowish within 48 hours and disappear for almost a week[5]. Despite the potential for recurrence of symptoms and fluctuation in severity due to the uncertain origin of the disease and its persistent causes in patients' lives, the prognosis for GDS remains favorable[5].

GDS is seen as an exclusion diagnosis, and its main cause is some psychological problems[2]. Patients have found different treatment methods beneficial, such as exchanging plasma or using antidepressants[6].

Herein, we report four GDS cases.

Case Report

The first patient is a 24-year-old woman who has been complaining of painful ecchymosis for six months. She was preoccupied with family issues.

The second patient is a 35-year-old woman who has complained of painful ecchymosis for 2 months. She was dealing with relationship issues.

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The third patient is a 30-year-old woman, and she has painful ecchymosis. The onset of her symptoms coincided with her mother's hospitalization.

The fourth patient is a 15-year-old girl who has had ecchymosis for 3 days and itching for 2 weeks.

None of the patients had bleeding disorders, hemoglobinopathies, or a history of chronic medication and supplement use. Furthermore, no trauma is reported. There are no additional physical examination findings.

Furthermore, international normalized ratio, prothrombin time, activated partial thromboplastin time, bleeding time, and fibrinogen were in the normal range in all patients. A peripheral blood smear was found to be normal. The total blood count was also normal, with the exception of the platelet large cell ratio (P-LCR) value, which was lower in all patients. There was no other significant value in laboratory findings (Table 1).

The lack of a family history or other diseases, the absence of any other complaints or signs GDS. As a result, we administered 1 mL of the patient's own blood intradermally. We also administered saline as a control. We observed the injection areas after 1 hour and 24 hours, respectively. After the injection, skin reactions were observed. Eventually, the test results affirmed the diagnosis of GDS (Figure 1).

The treatment for GDS often involves addressing any psychological disorders that may be contributing to the condition. All the patients in this case study had stress factors that may have caused their GDS. After diagnosing GDS, we referred them to a psychiatrist for treatment. Before sharing patient information, we obtained their consent.

Discussion

The diagnosis of GDS, a condition characterized by unexplained, painful ecchymosis, often involves ruling out other potential causes.

There is no clear cause of the GDS, but it has been suggested that antibodies against phosphatidylserine may trigger immune complex and complement activation, resulting in the clinical symptoms seen in auto erythrocyte-sensitization syndrome[7]. Nevertheless, in GDS, Coombs test results were negative[8]. Lower immunoglobulin G concentrations or affinity, as well as lower non-gamma globulin inhibition, can lead to negative Coombs tests in hemolytic anemias[8].

The autoerythrocyte sensitization test, which does not depend on specific values, is used to diagnose the problem by looking at the skin for signs of swelling, changes in color, redness, and soreness four to twelve hours and twenty-four hours after the injection[9]. In certain cases, the area is monitored for several days to document any skin changes[9]. While GDS usually shows a positive response to this test, there are cases where the injection results in no reaction[4]. The absence of a reaction in the autoerythrocyte sensitization test does not rule out the diagnosis of GDS[10].

GDS can be caused by obsessive disorders, emotional fragility, borderline disorder, hypochondriac personality, and post-traumatic stress[5,11]. Additionally, this syndrome can be accompanied by a hematoma in the muscle, vaginismus, a stroke, lymphoid abnormalities, glomerulonephritis, pseudoainhum, hematuria, gastrointestinal symptoms (epigastric pain, hemorrhages, nausea, vomiting, and diarrhea), and neurological symptoms (fever, arthralgia, myalgia, headaches, and dizziness)[5,11]. Research on the etiologies of these symptoms reveals no relevant pathology, and despite symptomatic treatment attempts, these symptoms remain spontaneous and recurrent[11,12].

Treating the underlying psychological disorder is crucial for achieving illness remission[13], given the widespread recognition that psychological disorders can mimic skin conditions, and conversely, psychiatric and psychological disorders frequently link to skin diseases[14]. Various treatments have been identified as potentially helpful, including selective serotonin reuptake inhibitors, corticosteroids, and tricyclic antidepressants[4,15]. However, the outcomes achieved with these medications are not consistently effective. Researchers have used antihistamines and psychiatric therapy to treat GDS[4,13,15], but the effectiveness of these approaches varied. If initial treatment proves ineffective in treating GDS, regular psychotherapy and carefully adjusted dosages of SSRI medication may be necessary to achieve long-term success[4].

GDS is more common in young adult women, but there have also been reports of cases in men and children[1]. Estrogen may contribute to the

Table 1. Patient demographics and laboratory results

	Case #1	Case #2	Case #3	Case #4
Age and gender	24/female	35/female	30/female	15/female
Platelet larger cell ratio (17.5-42.3%)	15.1	15.6	16.1	22.3
Total cholesterol (125-200 mg/dL)/HDL (40-80 mg/dL)/LDL (60-130 mg/dL)	108/70/29	186/47/126	233/74/83	
Triglycerides (50-200 mg/dL)	43	64	326	
Serum iron (40-170 µg/dL)	97	61	108	
ALT (10-35 U/L)	10	11	11	11
AST (10-42 U/L)	15	16	14	15
Prothrombin time (11-16 s)	15.3	15.2	13.3	14.4
INR	1.16	1.12	1	1.11
Activated partial thromboplastin time and fibrinogen	Normal	Normal	Normal	Normal
The autoerythrocyte sensitization test	Positive	Positive	Positive	Positive

HDL: High density lipoprotein, LDL: Low density lipoprotein, ALT: Alanine aminotransferase, AST: Aspartate aminotransferase, INR: International normalized ratio

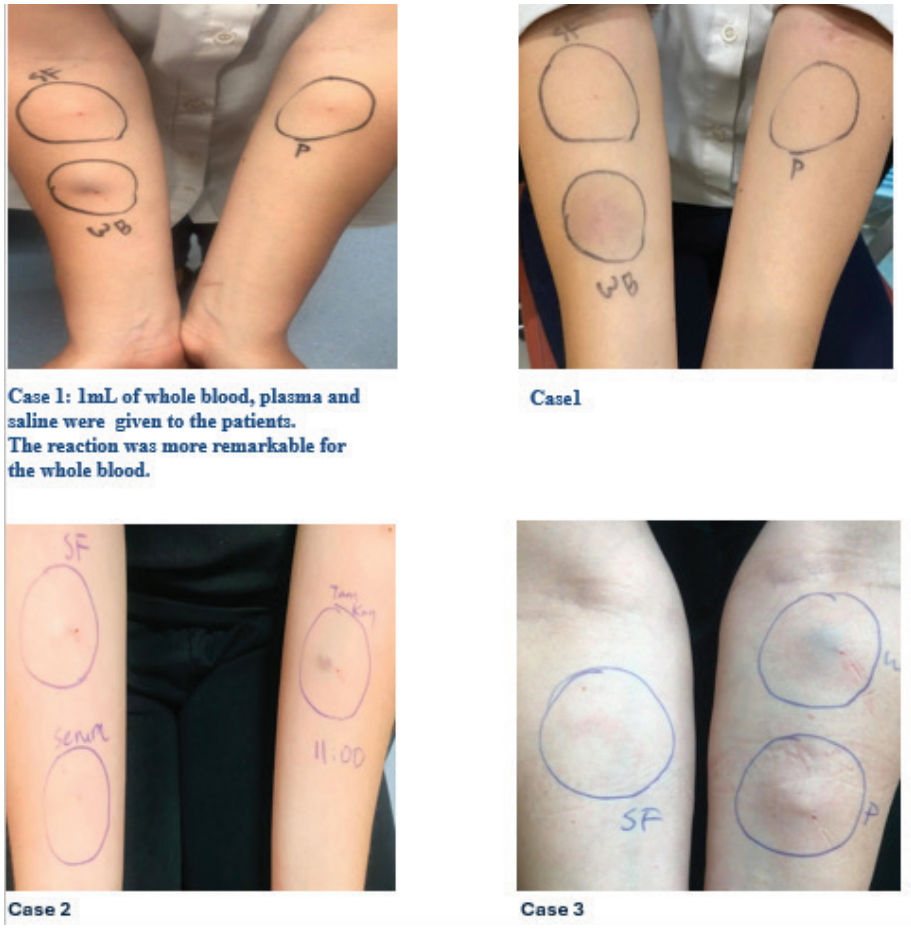

Figure 1. Eventually, the test results affirmed the diagnosis of GDS
GDS: Gardner-Diamond syndrome

disproportionate gender distribution, as it is more common in females[4]. On the other hand, all of our patients' estradiol levels were within the normal range.

Another important point is that the differential diagnosis should consider possible conditions such as platelet disorders, coagulation deficiencies, vasculitis, and erythema nodosum[3]. We found no evidence to support these conditions in our patients.

In this article, three of the patients have low P-LCR levels. P-LCR denotes the proportion of large cells greater than 12 fl. Large platelets have a higher metabolic activity, and they can represent the overall ratio of young platelets[12]. However, according to the current literature, there is not any correlation between P-LCR and autoerythrocyte sensitization syndrome.

GDS is a medical condition characterized by unexplained bruising on the skin. The exact cause of GDS is unknown, but it is thought to have a psychological component. Moreover, the diagnosis of GDS typically involves ruling out other potential causes[16].

Treatment for GDS often focuses on addressing any underlying psychological disorders that may be contributing to the condition. Accordingly, all our patients have a stress factor that may cause this situation.

We need further research to fully understand the mechanism behind GDS.

Furthermore, analyzing P-LCR values can provide more information.

Ethics

Informed Consent: It was obtained.

Authorship Contributions

Surgical and Medical Practices: E.G., S.Ç., N.Y.A.A., Ş.B., N.A., Concept: E.G., S.Ç., N.Y.A.A., Ş.B., N.A., Design: E.G., S.Ç., N.Y.A.A., Ş.B., N.A., Data Collection or Processing: E.G., S.Ç., N.Y.A.A., Ş.B., N.A., Analysis or Interpretation: E.G., S.Ç., N.Y.A.A., Ş.B., N.A., Literature Search: E.G., S.Ç., N.Y.A.A., Ş.B., N.A., Writing: E.G., S.Ç., N.Y.A.A., Ş.B., N.A.

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