

Knuckle Pads as a Psychocutaneous Manifestation in a Stressed-out Child

Stres Altındaki Bir Çocukta, Psikokutanöz Manifestasyon Gösteren Eklem Yastıkçıkları

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ABSTRACT Knuckle pads (KP) are benign, firm papules, nodules, or plaques on the dorsal joints of the hands or toes. It's mostly idiopathic, also, children who bite and suck their fingers may have KP. An 11-year-old child was brought to our polyclinic with the complaint of thickness on his hand joints. The child was healthy otherwise, he didn't have joint pain and family history. He was questioned in terms of being under any kind of stress. He said that his schoolmates were always making fun of him. When he was asked if he was using his hands in those moments to relax, he said "yes" and showed the movement. His father confirmed that the kid was experiencing an adaptation problem in the school, then, he is referred to the department of child psychiatry. KP is associated with lots of factors but especially in children, it may be a psychocutaneous manifestation. Also, it may cause a social embarrassment triggering the vicious cycle of stress-related pathogenesis.

Keywords: Knuckle pads; psychocutaneous disease; pediatric knuckle pads; stress

ÖZET Eklem yastıkçıkları, el ya da ayak parmak eklemleri dorsalinde yerleşen selim, sert papül, nodül ya da plaklar şeklinde izlenmektedir. Çoğunlukla idiyopatik olarak izlenirken, parmaklarını ısırma ya da emen çocuklarda da görülebilmektedir. On bir yaşındaki bir çocuk, el eklemleri üzerinde kalınlaşma nedeni ile polikliniğe getirildi. Çocuk, diğer açılardan sağlıklıydı, eklem ağrısı yoktu ve aile öyküsü bulunmamaktaydı. Çocuğun, herhangi bir stres altında olup olmadığı konusunda sorgulandı. Hasta, okul arkadaşlarının sürekli onunla dalga geçtiğini belirtti. Bu anlarda rahatlamak için ellerini kullanıp kullanmadığı soruldu ve hasta kullandığını belirterek, elleriyle nasıl bir hareket yaptığını gösterdi. Babası, çocuğun yeni okuluna uyum sağlamakta zorlandığını belirtti ve hasta, çocuk psikiyatri bölümüne sevk edildi. Eklem yastıkçıkları, selim ve iyi bilinen lezyonlar olup, birçok sebep ile ilişkili olabilmektedirler. Fakat özellikle çocuklarda, psikokutanöz bir bulgu olarak karşımıza çıkabilir ve çocuğu utandıracak kadar belirgin olup, daha fazla strese yol açabilir.

Anahtar Kelimeler: Eklem yastıkçıkları; psikokutanöz hastalık; pediatrik eklem yastıkçıkları; stres

Knuckle pads (KP) are benign well-circumscribed smooth, firm fibromatous papules, nodules, or plaques overlying the joints on the dorsal hands and less often toes.¹ They are typically asymptomatic and can be associated with other fibromatous disorders but most KP are idiopathic.^{2,3} Athletes, boxers and surfers may have KP due to repetitive motions, in a similar manner, psychologically disturbed children who bite and suck their fingers may also have KP in the traumatized areas.²

CASE REPORT

An 11-year-old child was brought to our polyclinic with the complaints of thickness and some textural change on all of his proximal interphalangeal joints (PIP) except the thumbs (Figure 1). He was otherwise healthy, he didn't have any joint pain and familial history. He was asked if he had been under stress or he had been doing any repetitive movements in which the PIP were involved. He said that his school friends

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FIGURE 1: Knuckle pads are seen on all of the proximal interphalangeal joints except the thumbs.

were always making fun of him which he couldn't bear any more. When he was asked if he was using his hands in those moments or later to relax, he said "Yes" and showed the movement as rubbing the dorsal aspects of his hands back-and-forth against the table in front of him (Figure 2). We have learned that this repetitive movement perseverated for the last 7 months. His father said that he had an adaptation problem in his new school. They were referred to the department of child & adolescent psychiatry to get a real solution for the underlying reason. Informed consent from the legal guardian of the patient for sharing his pictures and data in a medical platform (accessible by also public) was obtained.

DISCUSSION

Stress, emotional disturbances, or psychiatric disorders may be the leading factor in the onset and the further course of some dermatologic disorders. These



FIGURE 2: The patient has showed his repetitive movement by rubbing the dorsal aspects of his hands back-and-forth against the table in front of him.

kind of psychocutaneous disorders may be representatives of underlying psychiatric factors.⁴ Psychocutaneous disorders can be broadly categorized under three subtitles; 1) psychophysiological disorders like psoriasis, vitiligo, 2) primary psychiatric disorders based primarily on psychiatric problems and result in dermatological disorders and, 3) secondary psychiatric disorders caused by disfiguring dermatological disorders.⁵

KP are usually seen between the ages of 15-30 and persist through adulthood.⁶ Clinically, KP are painless and often affect both hands in an asymmetrical pattern.⁷ The diagnosis is clinical.⁸ Hyperpigmentation or hypopigmentation may be observed. Although they are asymptomatic, cosmetic concerns are the driving reasons for the patients to search for medical help.⁶

KP may be idiopathic or related to repetitive friction or pressure. They occur in association with several fibrosing diseases (Dupuytren's contracture, Ledderhoses syndrome and, Peyronie's disease) and are part of the autosomal dominant Bart-Pumphrey syndrome.⁹ In our case, the patient was under intensive stress because of an adaptation problem to his new school. When his friends were making fun of him, he was starting to rub his dorsal hands against any rough surface around him, back and forth for a long duration and repetitively. The accumulated effect of rubbing has resulted in the increased thickness of the dorsal hand joints over the time. Since the joints of the thumbs were not involved in these particular repetitive movements, there were no change on the dorsal aspect of the thumbs in terms of KP.

Having an impulse control disorder may lead to cutaneous findings like trichotillomania, onychotillomania which are considered to be primary psychocutaneous disorders.⁶ Likewise, KP in a psychocutaneous setting can also be categorized under primary psychocutaneous disorders.

The differential diagnosis includes Bouchard and Heberden's nodes of osteoarthritis, rheumatoid nodules, gouty tophi, synovial cysts, tumors. Plain radiography and ultrasound examinations may be helpful in the differential diagnosis with osteoarthritis,

gout and, rheumatoid arthritis which are unlikely seen in children.^{7,10} Other possible prediagnoses are scars, keloids, calluses, clavi, verrucae vulgaris, fibromas, granulomas annulare, xanthomas, foreign body reactions, erythema elevatum diutinum, and, Gottron's papules.^{8,9} Gottron's papules are seen in juvenile dermatomyositis as flat, erythematous/violaceous papules with central atrophy. The absence of typical skin rash and proximal muscle weakness and, normal serum levels of muscle enzymes are the important findings to exclude juvenile dermatomyositis.⁹

All of the prediagnoses can be differentiated by history, clinical examination and, histopathology. Histopathology of KP shows two patterns. The first pattern is epidermal pattern presenting hyperkeratosis, acanthosis, discrete fibroblast proliferation; and the second one is the dermal pattern with marked fibroblast proliferation, thickened collagen fibers, and sometimes hyperkeratosis.⁸

In our case, the patient didn't describe pain at all, he didn't have any muscle weakness, he didn't have a family history in terms of fibromatous diseases. He didn't show any syndromic features. He had just anxiety due to the misbehavior of his friends and he explored a way to get rid of stress by doing this repetitive movement. The real solution was offering a referral to child & adolescent psychiatry for this patient, also, he was recommended to stop the repetitive movement.

KP are benign and well-known lesions associated with lots of factors but especially in children

it may be a psychocutaneous manifestation and may be so embarrassing to cause more stress. These children should be evaluated by a dermatologist, pediatrician and child & adolescent psychiatrist in a multidisciplinary context. The parents also must be aware of this psychocutaneous manifestation not to overlook the importance of underlying reason.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Design: Hülya Cenk, Gülbahar Saraç, Kübra Nur Özcan; **Control/Supervision:** Hülya Cenk, Gülbahar Saraç, Kübra Nur Özcan; **Data Collection and/or Processing:** Hülya Cenk; **Analysis and/or Interpretation:** Hülya Cenk, Gülbahar Saraç, Kübra Nur Özcan; **Literature Review:** Hülya Cenk, Gülbahar Saraç, Kübra Nur Özcan; **Writing the Article:** Hülya Cenk, Gülbahar Saraç, Kübra Nur Özcan; **Critical Review:** Hülya Cenk, Gülbahar Saraç, Kübra Nur Özcan; **References and Findings:** Hülya Cenk.

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