

# CHAPTER 34

## PALMOPLANTAR KERATODERMA (Q82.8)

Osman GÖKDENİZ<sup>1</sup>  
Harbiye Dilek CANAT<sup>2</sup>

### REMEMBER

- ▶ Palmoplantar keratoderma (PPK) is defined as the thickening of palmar and plantar areas without friction.
- ▶ Palmoplantar keratoderma has acquired and inherited forms. Hereditary PPKs tend to occur at earlier ages of life.
- ▶ Some diseases such as pachyonychia congenita, Mal de Meleda, Olmsted, Papillon-Lefèvre, KID (keratitis, ichthyosis, deafness), Naegeli-Franceschetti-Jadassohn, Clouston, Huriez, Naxos, Haim-Munk, and KLICK syndromes are among the causes of hereditary PPK.
- ▶ Hereditary PPKs have autosomal recessive and dominant, mitochondrial and X-linked forms.
- ▶ Clinical evaluation of PPK patients begins with the division of cases into hereditary or acquired forms.
- ▶ Cases of hereditary PPK are first evaluated by features of dissemination (diffused, focal or point), presence/absence of transgressions, accompanying symptoms and, of course, family history.
- ▶ It is important that hereditary cases are evaluated together by dermatologists and medical geneticists.
- ▶ Various diagnostic tests, including complete blood count, fungal scrapings, chest X-ray, thyrotropin, antinuclear antibodies (ANA), rapid plasma reagent for syphilis (RPR), purified protein

<sup>1</sup> MD., Basaksehir Cam and Sakura City Hospital, Dermatology Clinic, osmangokdeniz96@gmail.com

<sup>2</sup> MD., Basaksehir Cam and Sakura City Hospital, Dermatology Clinic, dilekcanat@gmail.com



## Orthopedics/Plastic Surgery

- ▶ The patients suffering from PPK should be consulted for the treatment of pseudoain-hums, and/or scleroatrophies.

## Infectious Diseases

- ▶ Systemic pyogenic infections should be detected.
- ▶ The relationship of acquired PPK with crusted scabies, tuberculosis, leprosy, human papilloma virus (HPV), syphilis and HIV has been described. In case of doubt, an evaluation is required.

## Dentistry

- ▶ In hereditary cases, periodontal, and dental disorders will both give an idea about the type of PPK and possible treatments will be planned if accessible.

## Medical Oncology/Hematology

- ▶ If in doubt, PPK patients should be evaluated for esophageal and lung carcinomas.
- ▶ Female patients should also be screened for cancer of the breast, uterus, cervix and ovary.
- ▶ In addition, the relationship of acquired ichthyosis with Hodgkin's disease, non-Hodgkin lymphoma, some leukemias, multiple myeloma, Kaposi's sarcoma, and leiomyosarcoma is known. The patients should be evaluated in terms of these diseases in case of any symptoms, and/or doubt.

## Ophthalmology

- ▶ Patients should be evaluated by an ophthalmologist in terms of corneal inflammation, and ulceration.

## Psychiatry

- ▶ Patients should be evaluated by a psychiatrist to determine probable intellectual disorders, anxiety, and depression.

## Medical Genetics

- ▶ In hereditary cases, the related genetic tests should be requested when necessary.
- ▶ SLURP1 mutations, GJB2 connexin gene mutation, loricrin mutations, TRPV3 and PERP (TP53 apoptosis effector) defects can be examined.

## Clinical Pharmacology

- ▶ It has been shown that various drugs may trigger PPK. Lithium, hydroxyurea, quina-craine, and venlafaxine are some examples. In case of doubt, patients should be evaluated together with a clinical pharmacologist.

## REFERENCES

- Bodemer C, Steijlen P, Mazereeuw-Hautier J, O'Toole EA. Treatment of hereditary palmoplantar keratoderma: a review by analysis of the literature\*. *Br J Dermatol.* 2021;184(3):393-400. doi:10.1111/bjd.19144
- Duchatelet S, Boyden LM, Ishida-yamamoto A, et al. HHS Public Access. 2020;139(2):380-390. doi:10.1016/j.jid.2018.08.026.Mutations
- Chee SN, Ge L, Agar N, Lowe P. Spiny keratoderma: case series and review. *Int J Dermatol.* 2017;56(9):915-919. doi:10.1111/ijd.13680
- Bancalari-Díaz D, Gimeno-Mateos LI, Cañueto J, Andrés-Ramos I, Fernández-López E, Román-Curto C. Dermatologic Emergencies in a Tertiary Hospital: A Descriptive Study. *Actas Dermo-Sifiliográficas (English Ed.* 2016;107(8):666-673. doi:10.1016/j.adengl.2016.07.014
- Joseph R, Kallini, Khosro Sadeghani AK. Paraneoplastic Palmoplantar Keratoderma. 2017;99. [https://www.mdedge.com/sites/default/files/CT099003032\\_e.PDF](https://www.mdedge.com/sites/default/files/CT099003032_e.PDF)
- Nadhan KS, Warner CG, van den Berg-Wolf M, Civan JM, Ballal S, Chung CL. Palmoplantar keratoderma as a presenting sign of primary biliary cirrhosis. *JAAD Case Reports.* 2018;4(1):41-43. doi:10.1016/j.jdc.2017.07.002

- Urbańska-Ryś H, Robak E, Kordek R, et al. Multiple myeloma in a patient with systemic lupus erythematosus, myasthenia gravis and non-familial diffuse palmoplantar keratoderma. *Leuk Lymphoma*. 2004;45(9):1913-1918. doi:10.1080/10428190410001663581
- Palmoplantar keratoderma, epidermolytic, EPPK. OMIM - Online Mendelian Inheritance in Man. <https://www.omim.org/entry/144200>. Accessed 2022 Jan 11.
- Palmoplantar keratoderma I, striate, focal, or diffuse; PPKS1. OMIM - Online Mendelian Inheritance in Man. <https://www.omim.org/entry/148700>. Accessed 2022 Feb 01.
- Patel S, Zirwas M, English JC. Acquired palmoplantar keratoderma. *Am J Clin Dermatol*. 2007;8(1):1-11.
- Adamski Z, Burchardt D, Pawlaczyk-Kamieńska T, Borysewicz-Lewicka M, Wyganowska-Świątkowska M. Diagnosis of Papillon-Lefèvre syndrome: Review of the literature and a case report. *Postep Dermatologii i Alergol*. 2020;37(5):671-6.
- Carbonell Pradas M, Grimalt Santacana R. Aquagenic Keratoma: Treatment Update. *Actas Dermosifiliogr*. 2021;
- Sakiyama T, Kubo A. Hereditary palmoplantar keratoderma "clinical and genetic differential diagnosis." *J Dermatol*. 2016;43(3):264-74.
- O'Connor EA, Dzwierzynski WW. Palmoplantar keratoderma: Treatment with CO2 laser case report and review of the literature. *Ann Plast Surg*. 2011;67(4):439-41.
- Rodríguez-Villa Lario A, Vega-Díez D, González-Cañete M, Gómez-Zubiaur A, Vélez-Velázquez MD, Polo-Rodríguez I, et al. Aquagenic keratoderma with dorsal involvement treated with botulinum toxin. Case report and review of literature. *Dermatol Ther*. 2020;33(6).
- Has C, Technau-Hafsi K. Palmoplantar keratodermas: clinical and genetic aspects. *JDDG J der Dtsch Dermatologischen Gesellschaft*. 2016;14(2):123-40.

# BÖLÜM 35

## PALMOPLANTAR KERATODERMA (Q82.8)

Osman GÖKDENİZ<sup>1</sup>  
Harbiye Dilek CANAT<sup>2</sup>

### HATIRLA

- ▶ Palmoplantar keratoderma (PPK) palmar ve plantar alanların sürtünme olmadan kalınlaşması olarak tariflenir.
- ▶ Palmoplantar keratoderma akkiz (=edinsel) ve kalıtsal olarak ortaya çıkabilir. Kalıtsal PPK'lar daha erken yaşlarda ortaya çıkar.
- ▶ Pakionişi konjenita, Mal de Meleda, Olmsted, Papillon-Lefèvre, KID sendromu, Naegeli-Franceschetti-Jadassohn, Clouston, Huriez, Naxos, Haim-Munk ve KCLICK sendromları gibi bazı hastalıklar herediter PPK nedenleri arasındadır.
- ▶ Herediter PPK'ların otozomal resesif ve dominant, mitrokondriyal ve X'e bağlı kalıtılan formları vardır.
- ▶ Klinik değerlendirme, vakaların kalıtsal veya edinilmiş olarak ayrılması ile başlar.
- ▶ Kalıtsal PPK vakaları ilk olarak yayılım (yaygın, odaksal veya noktasal), transgredienlerin varlığı/yokluğu, eşlik eden semptomlar ve elbette aile öyküsünün özellikleri ile değerlendirilir.
- ▶ Kalıtsal vakaların dermatolog ve tıbbi genetik uzmanları tarafından beraber değerlendirilmesi önemlidir.

<sup>1</sup> Dr., TC Sağlık Bakanlığı Çam ve Sakura Şehir Hastanesi, Dermatoloji Kliniği, osmangokdeniz96@gmail.com

<sup>2</sup> Dr., TC Sağlık Bakanlığı Çam ve Sakura Şehir Hastanesi, Dermatoloji Kliniği, dilekcanat@gmail.com



## Kadın Hastalıkları ve Doğum

- Klimakterium/menopoz dönemindeki kadınlarda akkiz PPK gelişebilir. Kadın PPK'lı hastalar şüphe durumunda değerlendirilmelidir. Bu keratoderma tipi Haxthausen hastalığı olarak da bilinir. Hastalar bu açıdan jinekolojik olarak incelenmelidir.

## Ortopedi/Plastik Cerrahi

- Psödoainhumların ve/veya skleroatrofilerin tedavisi açısından danışılmalıdır.

## Enfeksiyon Hastalıkları

- Sistemik piyojenik enfeksiyonların tespiti yapılmalıdır.
- Akkiz PPK'nın krutlu skabiyez, tüberküloz, lepra, insan papilloma virüsü (HPV), sifiliz ve HIV ile ilişkisi tanımlanmıştır. Şüphe durumunda mutlaka değerlendirme yapılmalıdır.

## Diş Hastalıkları

- Herediter vakalarda peridontal hastalıklar ve diş bozuklukları hem PPK'nın tipine dair fikir verecektir hem de olası tedaviler mümkünse planlanacaktır.

## Medikal Onkoloji/Hematoloji

- Eğer şüphe varsa hastalar özofageal ve akciğer karsinomları açısından mutlaka değerlendirilmelidir.
- Kadın hastalar ayrıca meme, uterus, serviks ve over kanseri açısından taranmalıdır.
- Ayrıca edinsel iktiyozun Hodgkin hastalığı, Hodgkin dışı lenfomalar, bazı lösemiler, multipl myelom, Kaposi sarkomu ve leiyosarkom ile ilişkisi bilinmektedir. Gerekli durumlarda bu açılardan da değerlendirme yapılmalıdır.

## Göz Hastalıkları

- Korneal inflamasyon, ülserasyon açısından hastalar göz hastalıkları uzmanı tarafından değerlendirilmelidir.

## Psikiyatri

- Olası entelektüel bozukluklar, anksiyete ve depresyon açısından hastalar psikiyatrist tarafından değerlendirilmelidir.

## Tıbbi Genetik

- Kalıtsal vakalarda ilgili genetik testler istenmelidir.
- SLURP1 mutasyonları, GJB2 konneksin gen mutasyonu, loricrin mutasyonları, TRPV3 ve PERP (TP53 apoptozis efektörü) defektleri incelenebilir.

## Klinik Farmakoloji

- Literatürde bazı ilaçların PPK'yı tetikleyebildiği gösterilmiştir. Lityum, hidroksiüre, kinakrin ve venlafaksin bunlardan bazılarıdır. Şüphe durumunda hastalar klinik farmakolog ile birlikte değerlendirilmelidir.

## KAYNAKLAR

- Bodemer C, Steijlen P, Mazereeuw-Hautier J, O'Toole EA. Treatment of hereditary palmoplantar keratoderma: a review by analysis of the literature\*. *Br J Dermatol*. 2021;184(3):393-400. doi:10.1111/bjd.19144
- Duchatelet S, Boyden LM, Ishida-yamamoto A, et al. HHS Public Access. 2020;139(2):380-390. doi:10.1016/j.jid.2018.08.026.Mutations
- Chee SN, Ge L, Agar N, Lowe P. Spiny keratoderma: case series and review. *Int J Dermatol*. 2017;56(9):915-919. doi:10.1111/ijd.13680
- Bancalari-Díaz D, Gimeno-Mateos LI, Cañueto J, Andrés-Ramos I, Fernández-López E, Román-Curto C. Dermatologic Emergencies in a Tertiary Hospital: A Descriptive Study. *Actas Dermo-Sifiliográficas (English Ed)*. 2016;107(8):666-673. doi:10.1016/j.adengl.2016.07.014

- Joseph R. Kallini, Khosro Sadeghani AK. Paraneoplastic Palmoplantar Keratoderma. 2017;99. [https://www.mdedge.com/sites/default/files/CT099003032\\_e.PDF](https://www.mdedge.com/sites/default/files/CT099003032_e.PDF)
- Nadhan KS, Warner CG, van den Berg-Wolf M, Civan JM, Ballal S, Chung CL. Palmoplantar keratoderma as a presenting sign of primary biliary cirrhosis. *JAAD Case Reports*. 2018;4(1):41-43. doi:10.1016/j.jdc.2017.07.002
- Urbańska-Ryś H, Robak E, Kordek R, et al. Multiple myeloma in a patient with systemic lupus erythematosus, myasthenia gravis and non-familial diffuse palmoplantar keratoderma. *Leuk Lymphoma*. 2004;45(9):1913-1918. doi:10.1080/10428190410001663581
- Palmoplantar keratoderma, epidermolytic, EPPK. OMIM - Online Mendelian Inheritance in Man. <https://www.omim.org/entry/144200>. Accessed 2022 Jan 11.
- Palmoplantar keratoderma I, striate, focal, or diffuse; PPKS1. OMIM - Online Mendelian Inheritance in Man. <https://www.omim.org/entry/148700>. Accessed 2022 Feb 01.
- Patel S, Zirwas M, English JC. Acquired palmoplantar keratoderma. *Am J Clin Dermatol*. 2007;8(1):1-11.
- Adamski Z, Burchardt D, Pawlaczyk-Kamińska T, Borysewicz-Lewicka M, Wyganowska-Świątkowska M. Diagnosis of Papillon-Lefèvre syndrome: Review of the literature and a case report. *Postępowania Dermatologii i Alergologii*. 2020;37(5):671-6.
- Carbonell Pradas M, Grimalt Santacana R. Aquagenic Keratoma: Treatment Update. *Actas Dermosifiliogr*. 2021;
- Sakiyama T, Kubo A. Hereditary palmoplantar keratoderma "clinical and genetic differential diagnosis." *J Dermatol*. 2016;43(3):264-74.
- O'Connor EA, Dzwierzynski WW. Palmoplantar keratoderma: Treatment with CO2 laser case report and review of the literature. *Ann Plast Surg*. 2011;67(4):439-41.
- Rodríguez-Villa Lario A, Vega-Díez D, González-Cañete M, Gómez-Zubiaur A, Vélez-Velázquez MD, Polo-Rodríguez I, et al. Aquagenic keratoderma with dorsal involvement treated with botulinum toxin. Case report and review of literature. *Dermatol Ther*. 2020;33(6).
- Has C, Technau-Hafsi K. Palmoplantar keratodermas: clinical and genetic aspects. *JDDG J der Dtsch Dermatologischen Gesellschaft*. 2016;14(2):123-40.