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Why this session?

- Diagnosis of skin disease on palms and soles is difficult
- Skin inflammation on hands and feet often induces functional limitations
- Limited surface involvement can significantly impair the ability to walk or work
- Treatment is often more difficult
Session Plan

15:30 Introduction and differential diagnosis ➢ Dr. Bissonnette
15:55 Management of hand and foot psoriasis ➢ Dr. Strober
16:20 Management of hand and foot dermatitis ➢ Dr. Guttman
16:45 Role of patch testing in patients with inflammatory hand and foot dermatoses ➢ Dr. Cohen
17:10 Question period ➢ All faculty
Palmo-plantar Skin

- No hair follicle
- No sebaceous glands
- Overexpression of Keratins K6/K16
- More eccrine glands
- Fewer melanocytes
- Increase in density of nerve endings
- Increase in bacterial density
Differential Diagnosis
Psoriasis

- Sometimes morphology is typical

- When morphology is less typical look for clues
Psoriasis

- Clues for diagnosis
  - Well demarcated plaques
  - Often involving a limited area of the palms and/or soles
  - Often more hyperkeratotic than plaques elsewhere
  - Presence of typical plaques outside palms and soles
  - Nail involvement (pitting, onycholysis, oil drop, etc.)
  - Presence of arthritis
  - Family history
Chronic Hand Dermatitis

- Irritant contact dermatitis
- Allergic contact dermatitis
- Protein contact dermatitis
- Atopic dermatitis
Differential Diagnosis of Chronic Pustular Eruption on Palms and Soles

- Palmo-plantar pustulosis
- Pustular palmo-plantar psoriasis
- SAPHO
- Pustular drug eruption of palms and soles
  - TNF alpha antagonists
Palmoplantar Pustulosis

Separate disease entity versus variant of palmoplantar psoriasis: controversial

Clinical and epidemiological comparison of patients affected by palmoplantar plaque psoriasis and palmoplantar pustulosis: a case series study

A.M.G. Brunasso,1,2 M. Puntoni,3 W. Aberer,1 C. Delfino,4 L. Fancelli4 and C. Massone5


- 51 patients with palmoplantar psoriasis and 39 with PPP
- No difference in age of onset, presence of arthritis, familial history of psoriasis or smoking
- More women (p=0.01) and less nail involvement (p=0.03) in PPP
Increased expression in PPPP:

- IL-17A
- IL1b
- IL-36b
- IL-19
- LL37
- CXCL1

Bissonnette et al J Dermatol Sci 80:20; 2017
Pustular and Non-pustular Psoriasis Cytokine Profiles are Different

- Innate and adaptive immunity are activated in pustular palmo-plantar psoriasis
- In clinical practice
  - Look for pustules
  - Ask for historical presence of pustules
  - If pustules are present favor treatments acting on multiples cytokines
Palmoplantar Pustulosis

- Most patients are female (75-90%)
- Most patients are smokers or ex-smokers (up to 95%)
- Histology
  - Acrosyringium is the main site of pustule formation (Murakami J Invest Dermatol 130:2010;2010)
  - Intense inflammation in the superficial dermis around the acrosyringium
  - Spongiform pustules in the epidermis
PPP Pathophysiology

- Not well known
- Increase in cathelicidin in vesicles (hCAP18/LL37)

Plos One e110677, oct 2014
No Association with Mutations in IL36RN

Palmoplantar Pustular Psoriasis Is Associated with Missense Variants in *CARD14*, but Not with Loss-of-Function Mutations in *IL36RN* in European Patients

Journal of Investigative Dermatology (2015) 135, 2538-2541; doi:10.1038/jid.2015.186; published online 18 June 2015

251 German and Estonian patients with PPP compared to German, Estonian and European patients without PPP

Palmo-plantar Pustulosis and Thyroid Disorders

- Association between thyroid diseases and PPP in the literature for more than 30 years
- Series of 17 patients with PPP
- 25% had thyroid disorders
  - Hypothyroidism
  - Hashimoto disease
  - Multinodular goiter
- Numerous other publications mention association between PPP and thyroid disorders (16-53%)

Gimenez-Garcia J Eur Acad Dermatol Venereol 17:276;2003
Smoking Cessation and Palmo-plantar Pustulosis

- 63 consecutive patients with PPP
- 34 agreed to stop smoking
- Pustule evaluation by patient and dermatologist

Tonsillitis and PPP

- PPP has been associated with recurrent tonsillitis, gingivitis and dental abscess
- Increase in anti-Keratin IgG antibodies in serum of patients with PPP
- T cells from patients with PPP have:
  - Increased expression of b-1-integrin
  - Increased expression of CCR6
- Several open-label studies conducted in Japan suggest that tonsillectomy can improve PPP

Tanimoto et al Acta Oto-Laryngol 134: 70; 2014
Tonsillitis and PPP

- Increase in anti-Keratin IgG antibodies in serum of patients with PPP
- Prospective study of 18 patients with PPP who were treated with tonsillectomy

Tanimoto et al Acta Oto-Laryngol 134: 70;2014
SAPHO

- Synovitis, acne, pustulosis, hyperostosis, osteitis
- Affects children and adults; uncommon after 60
- Joint manifestations
  - Chest wall pain (73%)
  - Peripheral arthritis (32%)
  - Pain in sacroiliac joints (26.9%)
- Joint symptoms
  - Morning stiffness initially
  - Pain associated with osteitis and synovitis
- Joint involvement is usually destructive

Acral Necrolytic Erythema

Strongly associated with hepatitis C

Responds to oral Zinc therapy

NEJM 364:1479;2011
Differential Diagnosis

- **Frequent diagnosis**
  - Irritant contact dermatitis
  - Allergic contact dermatitis
  - Psoriasis
  - Atopic dermatitis

- **Less frequent dermatoses**
  - Palmoplantar pustulosis
  - Juvenile plantar dermatosis
  - Acro-dermatitis continua of Hallopeau
  - Lichen planus
Differential Diagnosis

- Others
  - Dermatophyte infection (id or infection)
  - Mycosis fungoides
  - Syphilis
  - Scabies
  - Acral Necrolytic erythema
  - Reactive arthritis (Reiter)
  - Connective tissue diseases
  - Vitamin deficiencies
  - Palmo-plantar keratoderma
  - Acrokeratosis paraneoplastica
General Approach to Chronic Hand and Foot Dermatoses

- Think about infections
  - Syphilis
  - Acral necrolytic erythema (hepatitis C)
  - Scabies
  - Tinea manum
  - Gonorrhea (pustules on an erythematous-necrotic base)

- Think about cancer
  - Cutaneous T cell lymphoma (biopsy when in doubt)
  - Paraneoplastic acrokeratosis (Basex syndrome)
General Approach to Chronic Hand and Foot Dermatoses

- **Skin examination**
  - Hands and feet for clues
  - Complete skin examination for clues (including nails, scalp, folds and genitalia)

- **Laboratory investigations**
  - KOH and culture for mycology
  - Skin biopsies: mostly useful to rule out some of the less frequent non inflammatory diseases (MF, etc.)
  - Patch testing (always if diagnosis of chronic dermatitis)
Thank you!