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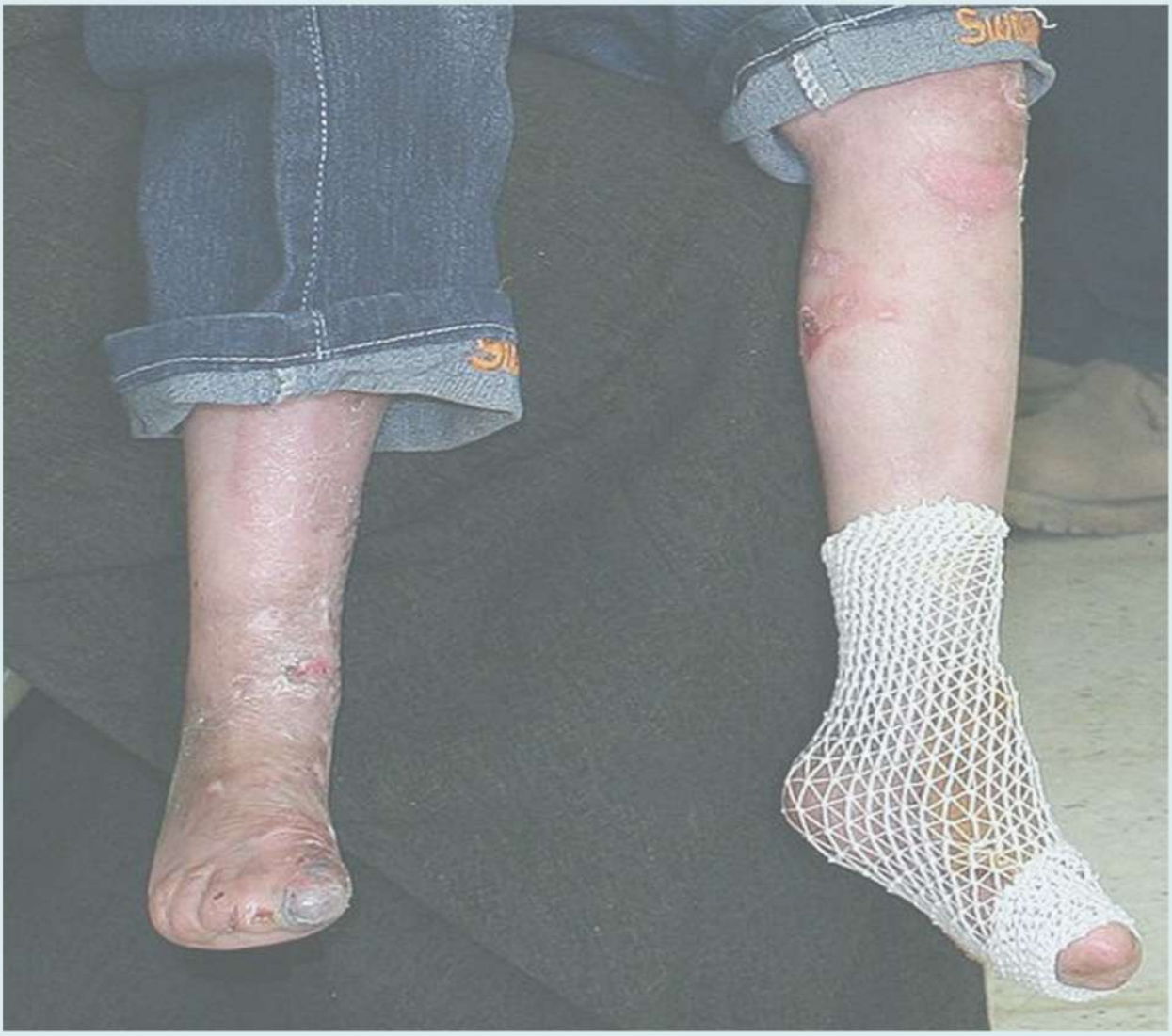

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Case Report

Palmoplantar Psoriasis Successfully Treated with Raw Natural Honey: A Case Report

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ABSTRACT

Palmoplantar psoriasis is a disabling condition linked to significant reduction in quality-of-life. It is manifested by the development of hyperkeratosis and/or recurrent batches of sterile pustules with associated erythema, scaling, and fissuring with symmetrical distribution on the palm and soles. Many modalities of treatment exist including systemic therapies such as psoralen-UVA (PUVA), retinoids, corticosteroids cyclosporine and methotrexate. Many of these systemic agents have un wanted and severe side effects besides their high cost. Furthermore, new agents such as TNF-alfa blockers have been reported to cause paradoxical induction of pustular psoriasis following their use or withdrawal. As a result safe, topical and effective alternatives are highly needed in treating this chronic condition. We describe the clinical characteristics and evolution of a 68-years-old female with palmoplantar psoriasis who was treated successfully with topical raw honey. This report provides preliminary evidence to support the use of topical raw honey under occlusive dressing in the management of palmoplantar psoriasis.

Keywords
Palmoplantar psoriasis; Raw natural honey; Inflammation.

INTRODUCTION

Palmoplantar psoriasis is a disabling condition that is difficult to treat and is present in up to 40% of patients with plaque psoriasis.[1] It is a disabling condition that can manifest in a hyperkeratotic plaque-type, pustular form or combination. In comparison with plaque psoriasis on other areas of the body, palmoplantar psoriasis leads to a disproportionately greater impairment of health-related quality of life (HRQoL).[2] Psoriasis is a multifactorial condition influenced by numerous factors in its presence and severity, such as stress, exercise, alcohol, obesity, etc. Patients with palmoplantar psoriasis have difficulty walking, suffer a significant amount of pain in the palms and soles which may lead to an inability to work.[2-4] Palmoplantar psoriasis typically represents a difficult to treat variety of psoriasis and unlike plaque-type psoriasis, pustular psoriasis is characterized by homozygous or compound heterozygous interleukin-36 (IL36RN) gene mutations leading to aberrations in IL-36R antagonist function.[5] The thickened horny layer of palmar and plantar[6] epidermis partially causes low bioavailability of classic topical anti-psoriatic drugs, hence the unsatisfactory results after prolonged usage. Systemic treatment on the other hand may include psoralen-UVA (PUVA), systemic retinoids and a combination of both,[7,8] but they often fail to give convincing results.[9] Tumor necrosis factor (TNF) antagonists are successfully being used in the treatment of psoriasis. However, unexpected side effect of TNF antagonists include the new onset or worsening of psoriatic skin lesions,[10-15] eczematous eruptions, bacterial infections, herpes simplex, cutaneous lymphomas, lichenoid eruptions, erythema multiforme, acute generalized exanthematous pustulosis and lupus erythematosus pustulosis. Acitretin, cyclosporins lead to quick remissions but recurrence rate limits their wide application. Here we present a case report in which a patient with palmoplantar pustular psoriasis showed complete healing with raw natural honey.

CASE REPORT

An otherwise healthy female subject, 68-years-old, presented to Umgwailinah Health Center, Doha, Qatar, with pustule palmar psoriasis (Figure 1), on her feet, showing numerous small flat pustules (2-3 mm in diameter), yellowish in color, on an erythematous basis.

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Figure 1A. *Involvement of Right Foot*

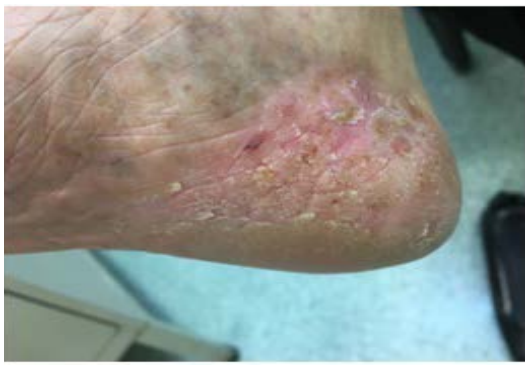
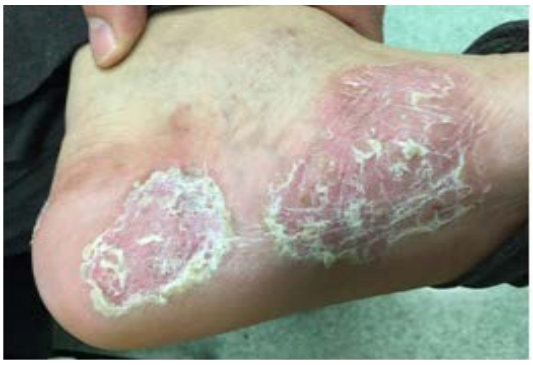


Figure 1B. *Involvement of Left Foot Prior to Treatment*



The patient was complaining of continuous pain and burning sensation. She reported the appearance of her feet lesions about three months prior to presentation, and explained the emergence of new pustules in few hours, while older lesions were forming a yellowish crust which were falling spontaneously after few days. The patient does not smoke, had no family history of psoriasis or other skin diseases, was not on any medications and reported no contact with any topical irritants. Further clinical evaluation was negative for bone or joint pain suggestive of concomitant arthritis or Synovitis-Acne-Pustulosis-Hyperostosis-Osteitis (SAPHO) syndrome. Additionally, the patient did not report any symptoms suggestive of thyroid disease or gluten sensitivity (eg, diarrhea, flatulence, abdominal pain, steatorrhea). Family history was negative for thyroid and coeliac disease. During the clinical examination, no other lesions were observed in any other part of the body including the nails. A rheumatologic assessment showed no clinical joint involvement and blood investigations for inflammation and infections was negative. The patient had visited a dermatologist prior to presenting to our health center. He carried out clinical examination, took swabs and blood cultures for infections which revealed sterile pustules and negative serology for infections. Similarly, mycological and bacteriological test was carried and found to be negative. This was followed by a punch biopsy on which revealed subcorneal unilocular pustulosis filled with neutrophils and eosinophils in the upper dermis and mixed perivascular and diffuse infiltrate in the dermis (neutrophils, eosinophils, lymphocytes and mast cells). Epidermal changes revealed (loss of granular layer, parakeratosis and psoriasiform epidermal hyperplasia).

On examination, the patient had bilateral well-demarcated erythema, hyperkeratosis, desquamation and multiple pustules on the instep, medial border and at the insertion of the Achilles tendon (Figure (1)). It involved at least 50 percent of the plantar surface significantly limiting her daily activities with no additional body involvement. The patient was instructed to apply raw honey directly on the lesions and cover it with Adaptic (glycerin based dressing) to prevent the absorption of natural honey away from the lesions and into the secondary cotton gauze bandage. The dressing was changed on a daily basis, and the patient was educated about a transient stinging sensation at the site of application due to the acidic nature of honey. After eight weeks the clinical picture of the right foot was substantially improved, showing a reduction of inflammation, desquamation, and complete disappearance of pustules (Figure (2a)). On the left foot similar finding were achieved with total resolution of the inflammation, erythema, desquamation and pustules (Figure (2b)).

Figure 2A. *Right Foot Disappearance of Scales & Pustules 8 weeks Later*

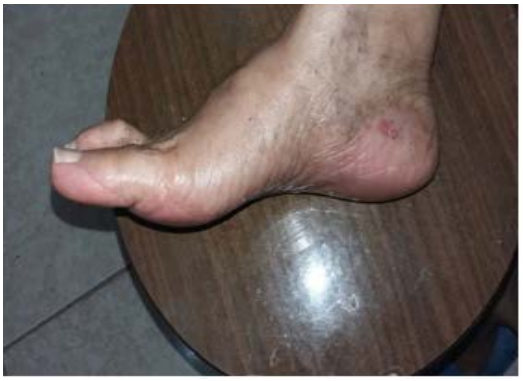
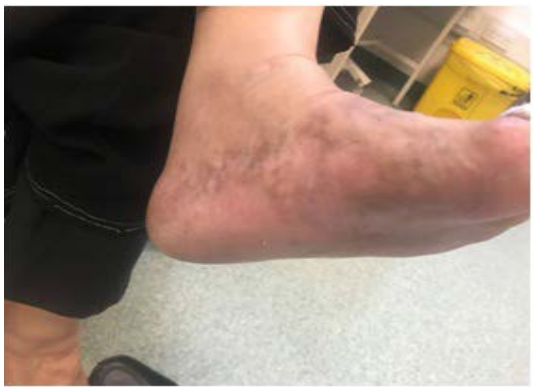


Figure 2B. *Left Foot Showing Normal Skin After Treatment with Raw Honey*



DISCUSSION AND CONCLUSION

Despite the wide range of therapeutic options, treatment of a patient with palmoplantar psoriasis can be challenging. Although systemic therapies often show initial efficacy, none the less relapse and

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unwanted side effects along with resistance by some patients to any kind of therapy leads to frustration and disappointment by both patients and healthcare providers. According to a systematic review by Li l et al[16] current topical treatments including laser therapy, tazarotene ointment and methotrexate gel apart from phototherapy do not have sufficient evidence to justify their use. None theless, phototherapy needs to be administered over a long treatment period, around 21.9 months before noticeable improvements can be seen,[17] it also causes erythema, irritation and burning.[16,17,18] Topical methotrexate has been advocated as an adequate alternative to systemic side effects with less adverse effects.[19] However, a small prospective, open label study involving fourteen patients showed variable results by Kumar et al.[20] Similar to PUVA various side effects have been reported with topical methotrexate including redness, burning sensation, purpura and blisters at the site of application.[21-23] Tar topical ointment had been studied in the treatment of Palmoplantar Psoriasis (PPP) by Kumar et al, however only 50% of patients reported improvements in their symptoms[24,25] along with various side effects including pruritus, itchiness, folliculitis, staining, irritant contact dermatitis and redness.[26] Similar disappointing results had been obtained with topical retinoids where only 52.9% of patients with PPP achieved complete resolution maxacalcitol ointment where only 17% of test subjects reported marked improvements.[27,28] Although topical corticosteroids are an integral part of the therapeutic options available to treat psoriatic lesions, numerous and common cutaneous side effects are undesirable and lead to dissatisfaction among patients and health care practitioners alike. The most common side effect being striae rubrae distensae , skin trophy and perturbed cicatrization. Steroid acne, hypertrichosis perioral dermatitis, telangiectasia, erythema, rubeosis steroidica and hyperpigmentation may also occur.[29] Furthermore, topical steroids may exacerbate cutaneous bacterial or fungal infections.[30]

Maintaining corticosteroids efficacy and at the same time abolishing side effects represents a formidable challenge to clinicians and researchers alike. The use of raw of natural honey in the management of various cutaneous lesions including, seborrheic dermatitis,[31] knee psoriasis,[32] thermal burns,[33] second degree burns complicated by dermatitis[34] and chronic diabetic foot ulcers[35-41] provides a promising alternative remedy for PPP. The patient did apply various over the counter creams including aqueous cream, petroleum based jelly and glycerin prior to her presentation to us but was disappointed with the results. In our case, we specifically used a glycerin based barrier dressing to maximize contact of raw honey with the skin by preventing the absorption of honey onto the secondary dressing (cotton gauze). Application of honey provides a thick film that provides continuous supply of water and at the same time hinders water evaporation from the skin. Therefore, the water content of raw honey increases hydration in the stratum corneum and consequently leads to reduction in scaling and erythema and pruritus associated with psoriasis.

The anti-inflammatory effects of honey have been observed in animal models as well in clinical settings.[42] Some compounds like prostaglandins and nitric oxide are major players in the process of inflammation. Honey is known to increase nitric oxide end products and decrease the prostaglandin levels. The efficacy of natural honey in wound care has been attributed to its anti-inflammatory activity. Important constituents in honey thought to be responsible for its anti-inflammatory activity include flavonoids, specific polyphenols, phenethyl ester, and caffeic acid. Honey exerts its anti- inflammatory activity by suppressing the production and proliferation of inflammatory cells at the site of inflammation (wound), thereby preventing the prolonged inflammatory response, and at the same time enhances proinflammatory cytokine production, thereby helping normal healing to occur. Wound healing involves a remodeling process of the inflicted tissue, consisting of a systematic cascade of events comprising various interactions that are regulated by growth factors, cytokines, and proteases. An important marker of inflammation is the transcription factor nuclear factor-kappa beta (NF-KB). It stimulates proinflammatory activity which in turn contributes to an amplified inflammatory response, and stimulates genes encoding for proinflammatory cytokines tumor necrosis factor-α (TNF-α), interleukin (IL)-6, IL-8. As a result of enhanced production of proinflammatory cytokines, nitric oxide production is stimulated, an essential mediator of inflammation. Flavonoid in honey suppresses the production of nitric oxide and NF-KB activation.[43] Cost-effective, efficacious, topical and tolerable remedies are needed to treat this long-term disease due to the low quality of life patients with psoriasis have. Nonetheless rigorous clinical trials have to be conducted to validate the efficacy of natural honey with regards of type of honey, concentration of flavonoids and optimal duration of therapy.

In a recent Cochrane systematic review the authors concluded "Honey appears to heal partial thickness burns more quickly than conventional treatment (which included, soframycin-impregnated gauze, paraffin gauze polyurethane film, sterile linen and leaving the burns exposed) and infected post-operative wounds more quickly than antiseptics and gauze".[44] Another systematic review assessing the healing effects of honey dressings compared to silver dressings for acute or chronic wounds demonstrated the unequivocal result that honey had an even more positive effect than silver on wound healing.[45] The rational of using honey is that it not only provides moisture but rather exhibits anti-inflammatory actions thereby helping in the management of psoriasis. Honey anti-inflammatory activities is partially due to the presence of at least 11 phenolic compounds such as kaempferol and caffeic acid which leads to a decrease in the myeloperoxidase activity in 75±3%, which suggests a lower leucocyte infiltration that was confirmed by histological analysis. This extract also provided a reduction of 55±14% in the production of reactive oxygen species.[46] Furthermore, honey flavonoid significantly inhibits the release of pro-inflammatory cytokines such as TNF-α, IL-1β and the production of reactive oxygen intermediates (ROS).[47]

The anti-inflammatory effects of honey can be summarized by several mechanisms of action: (a) inhibition of leukocyte infiltration[48] (b) inhibition of matrix metal-loproteinase-9 (MMP-9) production in keratinocytes, inhibition of ROS formation[49] (c) inhibition of cyclooxygenase-2 (COX-2) and iNOS expression.[50]

Phenolic compounds (including flavonoids) are demonstrated to exert the primarily anti-inflammatory effects of honey.[51]

Chrysin, a flavonoid discovered in honey, has been demonstrated to have a powerful anti-inflammatory action.[52] It suppresses lipopolysaccharide-induced COX-2 expression through the inhibition of nuclear factor for IL-6 Deoxyribonucleic acid (DNA)-binding activity[53] and inhibits the release of NO and pro-inflammatory cytokines such as TNF-α and IL-1β. Furthermore, Majtan et al[54] discovered two other flavonoids in aqueous extract of honey, namely kaempferol, and apigenin which suppresses the activity of TNF-α-induced Multiple Medical Problems (MMP)-9 expression in HaCaT. Their findings are in line with Palmieri et al where apigenin inhibited TNF-α-induced MMP-9 expression *via* modulating Akt signaling in endothelial cells.[55]

Honey has been used here as an alternative therapy due to the preference of the patient (patient centered care) who refused flatly the main stream medical approach, so the wish of the patient was respected and as a result topical honey was used. The idea of having natural honey as a first line agent is not the intent of this case report but rather it's an eye opener for the scientific committee to think of utilizing a safe and cost-effective approach which can only be advocated after a rigorous multicenter randomized controlled clinical trial.

CONSENT

The authors have received written informed consent from the patient.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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Case Report

A Case of Junctional Epidermolysis Bullosa with Pyloric Atresia Due to Integrin β4 Gene Mutations

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ABSTRACT

Junctional epidermolysis bullosa with pyloric atresia is a rare bullous disease with autosomal recessive inheritance caused by abnormalities in the integrin α6 (*ITGA6*) or integrin β4 (*ITGB4*) gene. Its clinical symptoms range from mild to fatal. Herein, we report a case of mild junctional epidermolysis bullosa with pyloric atresia caused by compound heterozygous mutations in the *ITGB4* gene.

Keywords
Epidermolysis bullosa, Pyloric atresia, *ITGB4* mutation.

INTRODUCTION

Epidermolysis bullosa is a rare hereditary disorder characterized by mucocutaneous fragility and is caused by mutations in the genes that encode structural proteins in the epidermal basement membrane.[1] Even a slight external force can cause separation of the epidermis from the dermis, leading to the formation of blisters and erosions on the skin and mucosa. Epidermolysis bullosa is largely classified into simplex, junctional and dystrophic types according to the site of cleft formation. There is also a subtype associated with pyloric atresia called epidermolysis bullosa with pyloric atresia (EB-PA), which is divided into epidermolysis bullosa simplex with pyloric atresia (EBS-PA) and junctional epidermolysis bullosa with pyloric atresia (JEB-PA). JEB-PA is caused by abnormalities in the *ITGA6* or *ITGB4* gene. The *ITGA6* and *ITGB4* genes encode integrin α6 and integrin β4, respectively.[2] Since these genes are also expressed in organs other than the skin, including the gastrointestinal tract, pyloric atresia and the other symptoms of JEB-PA are considered to occur as complications. Most cases of JEB-PA show autosomal recessive inheritance and have mutations in both alleles of the gene. Abnormalities in the *ITGB4* gene have been reported to account for approximately 85% of all cases of JEB-PA.[3,4] Herein, we report a case of mild JEB-PA with abnormalities in the *ITGB4* gene.

CASE REPORT

The patient was a 49-year-old Japanese female born to healthy parents. She was found to have pyloric atresia at birth and underwent surgery for congenital pyloric atresia 1-week after birth. She developed blisters on her body at the age of 6-years. As shown in Figure 1, at present, she has blisters and erosions on the trunk and limbs, and pigmentation and mild skin atrophy are seen in the cured areas. All her nails are fragile and deformed with thickening. There are no tooth or hair abnormalities or pseudosyndactyly. Any other organs were not affected. Her family history includes her elder brother's death from malnutrition due to pyloric atresia in the neonatal period. A skin biopsy revealed subepidermal blisters and mild lymphocytic infiltration in the upper dermis (Figure 2). She was sent to Juntendo University Hospital for a consultation at the age of 48-years. Sanger sequencing of all coding exons and adjacent intronic boundaries of *ITGB4* compound heterozygous mutations of c.600dupC(p.F201Lfs*15) and c.1274A>C(p. Q425P) in the *ITGB4* gene. Based on the above findings, we made a final

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diagnosis of junctional epidermolysis bullosa with pyloric atresia due to the mutations in the *ITGB4* gene. We conducted detailed genetic counseling including that the mutation was inherited in an autosomal recessive fashion. The erosions on the trunk and limbs were treated symptomatically with topical 1% silver sulfadiazine cream, and the patient and the patient apply this cream once a day for the affected area. One year has passed since she started treatment at our hospital, and her general condition is good. Her rash tends to worsen slightly in summer.

Figure 1. *Clinical Findings: (a) Blisters and Erosions with Pigmentation on the Thigh. (b) Pigmentation and Erosions are Seen on the Lower Leg. The Toenails are Deformed and Thickened (c) Tense Blisters and Erosions at the Site of the Rash (d) the Pedigree: The Arrow Indicates the Patient of the Present Case.*

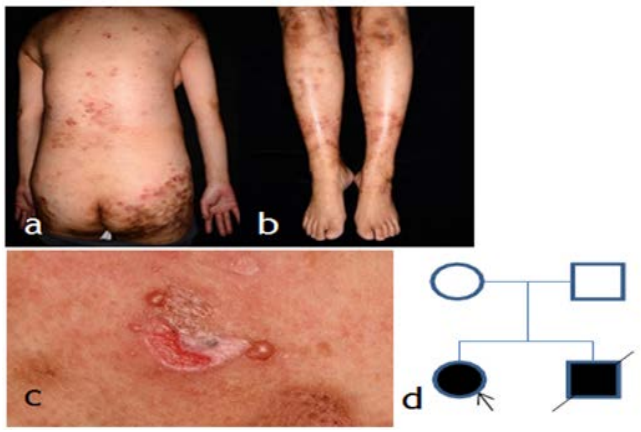
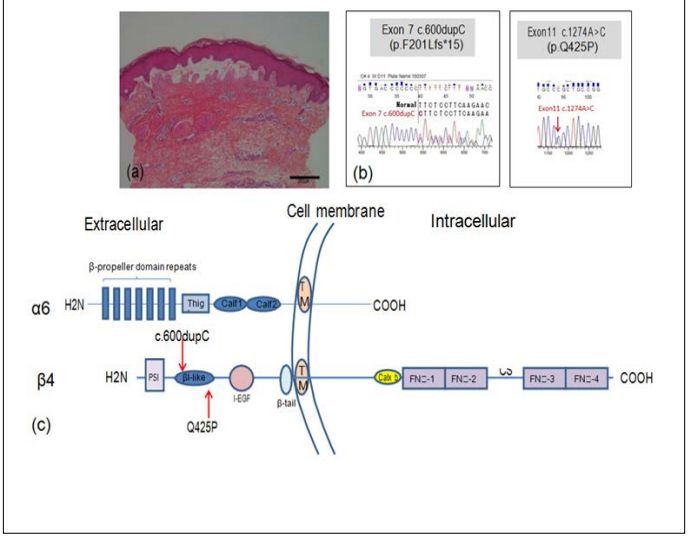


Figure 2. *(a) Pathological Findings: Subepidermal Blisters with Mild Lymphocytic Infiltration (b) Direct Sequencing of the Patient's ITGB4 Gene. Compound Heterozygous Mutations were Identified. (c) Schematic Structure of α6β4 Integrin. This Figure is Quoted from the Reference from Goletz and Schmidt. [10] The Arrows Show the Position of the ITGB4 Mutations. The Both Positions of the Predicted Amino Acid Substitution are Close to the N-terminus of ITGB4. H2N, N-terminus; COOH, C-terminus; TM, Transmembrane Domain; PSI, Cysteine-rich Plexin-Sema-Phorin-Integrin Domain; β I-like, β1-like Domain; I-EGF, Cysteine-Rich Integrin Epidermal Growth Factor Domain; β-tail, β-tail Domain; FNIII, Fibronectin Type III; CS, Connecting Segment*



DISCUSSION

JEB-PA involves both lethal and non-lethal mutations.[5] Lethal JEB-PA is generally caused by premature stop codons (PTCs) in both alleles, while nonlethal JEB-PA is mainly caused by a missense or splicing mutation in at least one allele. The c.600dupC(p.F201Lfs*15) mutation observed in the present case generates a PTC and has also been previously reported in one case by Masunaga et al.[6] Moreover, the missense mutation c.1274A>C(p. Q425P) has also been reported in some cases.[7] The combination of the gene abnormalities found in the present case was previously reported by Masunaga et al, and the JEB-PA patient, in that case, was a Korean patient who died of malnutrition at the age of 2-years.[6] Masunaga et al reported that an amino acid substitution from glutamine to proline at position 425 reduced the α-helix formation ability of integrin β4 in the adjacent region and that the gene abnormality Q425P was the pathogenic factor in that case. Furthermore, they described that since there have been fatal JEB-PA cases caused by a combination of a PTC and a missense mutation, "this combination may be regarded as a mediator of lethal and non-lethal cases." The patient reported by Masunaga et al died in childhood, while the present patient remains alive at the age of 49-years. Although her elder brother's gene polymorphisms are unknown, he likely carried the same gene abnormalities as the present patient and died in the neonatal period. Therefore, the gene abnormality Q425P may be a missense mutation that could be a lethal factor in some cases. In addition, Hattori et al reported a 5-year-old mild-JEB-PA patient with the E517Sfs*252/Q425P mutation.[7] The patient reported by Hattori et al was a Japanese girl with a mild form of the disease in whom erosions on the body spontaneously disappeared with age, and only mild nail deformities remained. We think that the present case is similar to the case reported by Hattori et al. In non-lethal case, skin lesions tend to improve with years.[8] Schumann H et al studied genotype-phenotype correlations and indicates that solely mild skin involvement was associated with deletion of the C-terminus of β4 integrin.[9] In the present case, both positions of the predicted amino acid substitution are close to the N-terminus of *ITGB4* (Figure 2c). These positions also may influence the clinical severity.

Further accumulation of genetic data from JEB-PA patients is required for a deeper exploration of the relationships between the genotype and phenotype and could lead to a deeper understanding of the role of integrin α6 and β4 in dermal-epidermis adhesions.

CONCLUSION

To the best of our knowledge, this is the second reported case of junctional epidermolysis bullosa with pyloric atresia caused by the compound heterozygous mutations of c.600dupC (p.F201Lfs*15) and c.1274A>C (p.Q425P). The genotype was consistent between the present case and the previously reported first case, but the clinical course differed greatly between the two cases. We think that the present case is very important in understanding the relationship between the genotype and phenotype in JEB-PA.

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CONSENT

The authors have received oral informed consent from the patient whose photographs are included in the manuscript.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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Brief Research Report

Lichen Planus Pigmentosus in North Africa: A Series of 17 Cases

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ABSTRACT

Background
Lichen planus pigmentosus (LPPig) is considered as a rare macular and pigmented variant of lichen planus. It is mainly reported in Indian and Latino American patients.

Objective
The aim of this paper is to report the characteristics of this condition in Moroccan patients.

Patients and Methods
Patients attending a private dermatology practice, in Casablanca, Morocco, and presenting with LPPig were consecutively enrolled. Inclusion criteria were the presence of macular pigmented lesions of the face, neck or arms, and/or cutaneous histology showing pigment incontinence with basal cell vacuolization and lichenoid infiltrate. Patients with melasma or post-inflammatory pigmentation were excluded. Demographic and medical data were collected.

Results
From January 2015 to December 2018, 17 patients were included, one man and 16 women, mean age 57.4±11 years. Ten patients had phototype III and five phototype IV. The mean duration of the disease was 6.7±7 years. The lesions were located on the face in all patients, with the involvement of the perioral area in 13 cases (76.4%), the forehead in 9 cases. The neck was involved in 9 cases (53%). In 7 cases (41%), frontal fibrosing alopecia was observed. Three patients had thyroiditis, three others had diabetes mellitus. Histology was performed in six cases, showing pigment incontinence and basal vacuolization. Lichenoid infiltrate was observed in four cases. Eleven patients were given tranexamic acid per os, 500 mg twice daily for 3 or 6 months. Topically, all patients but one received hydroquinone, and sixteen high potency dermocorticoids to the lesions. An the follow-up, only four patients had an excellent result with complete resolution of the lesions, in the others, the lesions stayed similar.

Conclusion
LPPig exits in North Africans although its prevalence is probably underestimated. This pigmentary disorder remains a challenging disease for therapy.

Keywords
Lichen planus pigmentosus; Tranexamic acid.

INTRODUCTION

Lichen planus pigmentosus (LPPig) is considered as a rare macular and pigmented variant of lichen planus.[1] Two other conditions are similar, with close clinical and histological characteristics: Ashy dermatosis described by Ramirez et al in 1957[2] and "pigmented cosmetic melanosis" also called Riehl's melanosis by Nakayama.[3] This pigmented dermatosis is characterized by brown to grey macules, located in face, neck, arms, and more rarely in flexural areas. Histology shows pigment incontinence and, sometimes, basal cell vacuolization. The disease affects preferentially women, in young to middle ages and predominantly with dark skin phototypes. LPPig was first described in Latin America, Indian subcontinent, the middle east, and the far east but never reported in North Africa. The aim of this paper is to report the characteristics of this condition in Moroccan patients.

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PATIENTS AND METHODS

The study was performed on patients attending the private practice of dermatology, in Casablanca, Morocco, from January 2015 to December 2018. Inclusion criteria were the presence of macular pigmented lesions of the face, neck or arms, and/or cutaneous histology showing pigment incontinence with basal cell vacuolization and lichenoid infiltrate. Patients with melasma, post-inflammatory pigmentation or photosensitization were excluded. Following data were collected: Age, gender, duration of disease, location, histology, associated diseases, treatment or physical procedures, and follow-up.

RESULTS

Seventeen patients were enrolled, one man et 16 women, mean age 57.4±11-years, from 31 to 80-years. Ten patients had phototype III, five phototype IV and two phototypes V. The mean duration of the disease was 6.7±7 years, from one to 25-years (Table 1).

Table 1. *Demographic and Clinical Data of 17 Patients with Lichen Planus Pigmentosus*

N°	Sex	Age (years)	Phototype	Duration (years)	Face	Peribucal	Neck	FFA	Histology	Tranexamic Acid	Follow up
1	M	31	III	4	+	+	+	-	+	+	X
2	F	80	V	2	+	+	-	-	-	-	Unfavorable
3	F	63	III	7	+	+	-	-	+	-	Good
4	F	50	III	3	+	+	-	-	+	-	X
5	F	52	IV	6	+	+	-	-	-	-	X
6	F	68	V	25	+	+	+	+	+	-	Unfavorable
7	F	43	III	2	+	+	+	-	-	+	X
8	F	53	III	3	+	+	-	-	-	-	X
9	F	52	III	12	+	-	-	-	-	+	X
10	F	45	III	4	+	-	+	+	-	+	Good
11	F	59	III	20	+	-	+	+	-	+	Good
12	F	67	III	1	+	-	+	+	-	+	Good
13	F	68	IV	1	+	+	+	+	-	+	Still being treated
14	F	43	IV	3	+	+	-	+	-	+	Still being treated
15	F	55	IV	20	+	+	-	-	-	+	Still being treated
16	F	55	III	1	+	+	+	+	+	+	Unchanged
17	F	42	III	0,5	+	+	+	-	+	+	Still being treated

FFA: Frontal Fibrosing alopecia, X: Unknown

The face was the initial location in all patients, followed by the neck. At the examination, the lesions were located in the face in all patients, with the involvement of the peribuccal area in 13 cases (76.4%), the forehead in 9 cases (53%) and the temples in 2 cases (Figures 1 and 2). One patient had also bilateral hyperpigmentation of eyelids and one had cheilitis. The neck was involved in 9 cases (53%), the dorsum of the hands in one case; no flexural lesion was observed. The color of the lesions was brown or grew. No inflammatory lesion was found 7 cases (41%), lichen planopilaris was associated, type of frontal fibrosing alopecia with the involvement of the eyebrows in three cases (Figure 3). Three patients had thyroiditis with hypothyroidism in one case; three other patients had diabetes mellitus. All patients had intense sun exposure but no fragrance application was reported.

Six patients underwent cutaneous histology; pigment incontinence was observed in all cases, as basal vacuolization (Figure 4). The biopsy showed lichenoid infiltrate.

Eight patients received antimalarials before 2016; after this date, 11 patients had tranexamic acid orally, 500 mg twice daily during 3 or 6-months. One patient had Vibramycin during 3-months and another one had an injection of corticosteroids. Typically, all except one patient received hydroquinone and sixteen high potency corticosteroids.

Figure 1. *Lichen Planus Pigmentosus. Diffuse Brown Macules of the Face*

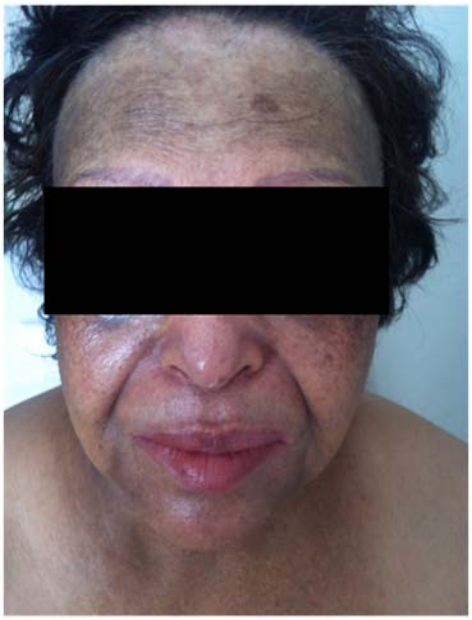

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Figure 2. *Lichen Planus Pigmentosus. Grey Patchy Pigmentation of the Submental Area*

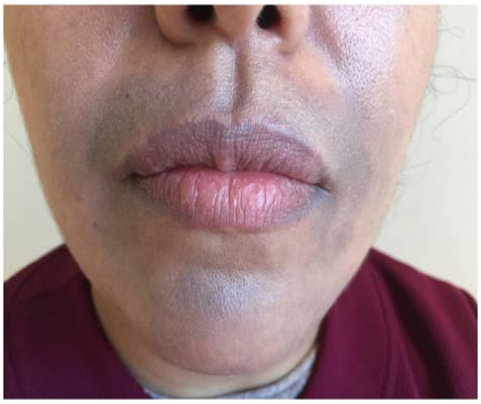


Figure 3. *Lichen Planus Pigmentosus and Frontal Fibrosing Alopecia*

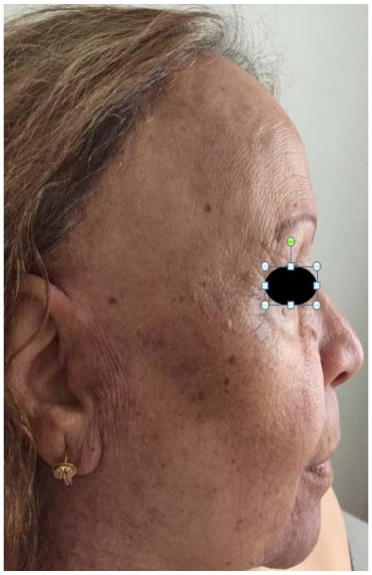
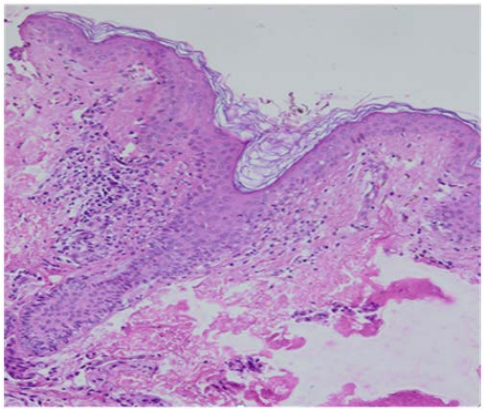


Figure 4. *Lichen Planus Pigmentosus, Cutaneous Histology: Basal Vacuolization, Focal Lichenoid Infiltrate, Pigmentary Incontinence. Hematoxylin And Eosine X100*



On the follow-up, four patients had an excellent result with complete resolution of the lesions, three of them received tranexamic acid during a course of three months. Five other patients still received treatment; two had less favorable evolution and in the six remaining patients, lesions stayed similar.

DISCUSSION

We report herein a series of 17 Moroccan patients with LPPig. Up till now, most cases were described in patients from India, Latin America and Middle East regions and this series are the first one reported in North Africa. This condition is considered as an uncommon variant of lichen planus; it was reported in young to middle-aged adult females of dark skin phototypes. Most of our patients were phototypes III or IV with a clear female predominance. In LPPig, the lesions are irregularly shaped or oval, brown to gray macules or patches, located on sun-exposed areas or, less commonly, on intertriginous folds. In our series, the face was involved in all cases, mainly in the perioral area followed by the neck. Cutaneous lesions were overall bilateral with a patch pattern. We noticed only one case with associated lesions on the hands but no flexural lesions. Bilateral upper eyelid lesions can be, although rarely, the predominant location in LPPig.[4] Other rare clinical forms are reported in the literature as blaschkoid, zosteriform, segmental or mucosal LPPig.[5,6] Most of our patients had a chronic course of their disease and this is a common feature in LLPig. Triggering factors were sun exposure with photoaggravation in some cases,[7] presence of hepatitis C virus and application of mustard oil.[6,7]

LPPig may be associated with other conditions. In our series, seven patients had frontal fibrosing alopecia (FFA). The first case of LPPig in an FFA patient was described by Dlova.[8] Two recent papers reported a strong association between FFA and LPPig. Among 91 FFA patients reported by Mervis, 45% were of Hispanic/Latino origin, and were more likely to have associated LPPig than those of other ethnicity.[9] There was a strong statistical association between women with FFA and LPPig[10,11] and in our series, near fifty percent of LLPig patients had FFA, confirming that the is a spectrum between LLPig and FFA. One case of associated LLPig and nail lichen planus was reported.[12] As in common lichen planus, some autoimmune conditions seem to be associated with LLPig, mainly diabetes mellitus, and thyroid disorders.

Many authors consider LPPig as a similar condition to Ashy dermatosis because of clinical and histological overlapping features.[13] In fact, Ashy dermatosis, also renamed "*erythema dyschromicum perstans*", is characterized by slowly progressive ashy-colored hyperpigmentation on face, arms, neck and trunk. Cases were reported in Latin American and Asian patients with a female predominance.[2] In both conditions, histology shows vacuolization of the basal cell layer, a slight mononuclear infiltrate in the upper dermis with dermal melanophages. Lichenoid reaction is more commonly seen in LPPig (90%) than in Ashy dermatosis (57%).[14] In our series, histology was performed only in six cases and showed identical features. So, the utility of histology is weak to distinguish between both conditions,[15] thus, avoiding a biopsy scar in the face is preferable. On immunohistology, direct immunofluorescence (DIF) staining was positive in 6 out of 21 cases of LPPig by Thientavorn, the most common pattern being immunoglobulin M (IgM)

colloid bodies. In the same series, patch testing was performed and was positive in 40 and 36.36% of Ashy dermatosis and LPPig cases respectively.[14] Although the controversy is still going, the two conditions have more similarities than differences.[13,15,16]

The diagnosis of LPPig is very difficult and can be confused with melasma or post inflammatory hyperpigmentation. Clinical signs are very close and histology is not systematically performed on the face. In our country, melasma remains the most common and the most challenging hyperpigmentation of the face.[17] Clinically, it seems that melasma predominates on the cheeks but spares the perimental area while it is the contrary in LLPig. In our series, the most frequently involved area is the peribuccal one then the neck, which is not so common in melasma. Thus, using other procedures to differentiate between the two conditions is useful. Dermoscopy can show discrete bluish-grey dots, globules, blotches and rods against a brownish background, these are typical features in LPPig according to Gajjar.[5]

Treatment of acquired hyperpigmentation has limited success, especially in LPPig. Although four patients had a total clearance of the patches, the remaining ones still have slight or no improvement. Topical treatments may involve high potency corticosteroids, hydroquinone and tacrolimus. Tacrolimus ointment 0.03% showed a good lightening of the disease after a course of 12-weeks in the series of Al Mutairi.[18] Among systemic treatment, hydroxychloroqine was commonly used with slight improvement. As in other pigmentary disorders, tranexamic acid is recently used in this condition but result has to be confirmed in LPPig. However, in our series, tranexamic acid seems to be a promising treatment.

CONCLUSION

LPPig remains a challenging disease, not only for clinical diagnosis, but also for therapy. In North Africa, especially in Morocco, the prevalence of this condition is probably underestimated.

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CONSENT

The authors have received oral informed consent from the patient whose photographs are included in the manuscript.

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Brief Research Report

Demographic Characteristics and Management of Uninsured Patients with a History of Melanoma

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ABSTRACT

Aims and Objectives
Patients diagnosed with malignant melanoma often undergo regular follow-up care and skin checks to reduce the likelihood of recurrence. Yearly exams are more inconsistent and likely to be missed due to a lack of healthcare access and resources among the uninsured population. This study determined demographic characteristics of uninsured patients with a history of malignant melanoma. Follow-up was assessed in order to improve and ensure the highest quality of long-term care.

Methods
Demographics and chronic disease diagnoses were extracted from 8,857 patients managed at eight free-clinics from the Tampa Bay Area during 2016 and 2017. Patients diagnosed with malignant melanoma were specifically chosen for further chart review. A retrospective analysis of the follow-up care and health outcomes are reported.

Results
A total of 200 of 8,857 reported a history of malignancy; ten patients (5%) were diagnosed with malignant melanoma. The average age of these patients was 52-years-old, 70% (N=7) of whom were female. Initial treatment for 2 patients (20%) was surgical excision. Remaining patients were either observed (N=2) or did not mention treatment to their free clinic provider (N=6). Post-operative follow-up for recurrent lesions varied between patients but a commonly cited reason that prevented proper follow-up with a dermatologist in eight of the ten patients (80%) was financial restraint.

Conclusions
Free-clinics should be cognizant of local dermatologists who provide subsidized services to those in need due to the higher prevalence of melanoma among the uninsured. Patients should also be directed to free clinics immediately after surgery to receive recommended follow-up skin checks. With education, free-clinics can deliver higher quality dermatology management to patients by following recommended standards.

Keywords
Dermatologic care; Free clinic; Malignant melanoma; Uninsured.

Abbreviations
NCCN: National Comprehensive Cancer Network; IRB: Institutional Review Board; AAD: American Academy of Dermatology; ABCDE: Asymmetry, Borders, Color, Diameter, Evolution; RISE: Research, Innovation, and Scholarly Endeavors.

BACKGROUND

Melanoma is an aggressive type of skin cancer that arises from the pigment-producing melanocytes of the epidermis.[1] Unlike the more common skin cancers, basal cell carcinoma and squamous cell carcinoma, melanoma is much more likely to metastasize to other parts of the body, rendering it malignant.[1] There are many risk factors associated with the development of melanoma,

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common ones being ultraviolet radiation exposure, use of tanning beds, fair skin, personal history of any skin cancer, family history of melanoma, and a compromised immune system.[2,3]

Early detection and treatment are of the most important factors in determining prognosis because they allow for a wider breadth of treatment options, increasing the likelihood that the chosen treatment will be effective.[4] Once the lesion invades lymph nodes and spreads systemically to other parts of the body, it becomes exceedingly difficult to control.[5] According to the National Comprehensive Cancer Network (NCCN), most cases of melanoma are first treated with surgical excision.[5,6] In the case that the melanoma has spread to regional lymph nodes or other body organs, surgical excision is often accompanied by adjuvant treatment.[5,7] Radiation therapy can be used when tumor cells are limited to regional lymph nodes because it decreases recurrence of disease and subsequent organ metastasis.[8] Immunotherapy may be used to modify the immune system such that it may gain the ability to fight off tumor cells.[9] Similar to chemotherapy, targeted therapy can also be used to kill tumor cells, but it relies on specific characteristics of the cells such as gene mutations.[10,11]

After an initial diagnosis and excision of a melanocytic lesion, it is important for patients to follow-up with monthly self-skin exams and annual physician skin exams.[12] Having a history of melanoma increases the risk of future melanoma occurrence. For this reason, taking necessary precautions such as avoiding excess ultraviolet exposure and performing consistent skin-checks becomes even more important in these patients.[13] In general, detecting recurrence earlier is more likely to improve treatment outcomes and prognosis.[13]

It is estimated that 1% of cancer diagnoses in the general population are comprised of melanoma.[14] With the number of uninsured patients rising, it is becoming more important to determine the prevalence and health outcomes of this population.[15] The aim of this study is to report on demographics and management of uninsured patients with a history of melanoma. Historically, very little data is collected on the uninsured population, with even less data being used to analyze melanoma in these patients. Given the potential for significant morbidity and mortality in patients with advanced melanoma, we would like to report on incidence as well as propose necessary steps to reduce this overall incidence in uninsured patients.

Yearly exams are more inconsistent and likely to be missed due to a lack of healthcare access and resources among the uninsured population. For this reason, patients need to be increasingly aware of how to properly perform monthly self-skin-exams, in addition to any other steps they can take to reduce the risk of recurrence. Uninsured patients should also be made aware of steps they can take to reduce risk of primary melanoma, similar to how they are educated on avoiding smoking to reduce risk of lung cancer or on maintaining colonoscopy follow-ups to remove polyps, overall reducing risk of colon cancer. Risk of melanoma can be reduced with proper education of patients on how to do so.

METHODS

Data regarding demographics and chronic disease diagnoses were extracted from 8,857 uninsured patients managed at eight free clinics from the Tampa Bay Area during 2016 and 2017. The sample size consisted of patients who were seen for the first time during the given time period of January 1, 2016 to December 31, 2017. Those who had been seen at one of the eight free clinics outside of this window were excluded from the sample.

Data gathered during chart review included demographic characteristics such as gender, age, race, employment status, income and household size. A diagnosis, or lack thereof, of any chronic condition, was also recorded, including any treatment the patient was receiving for it. We also determined social history by gathering smoking status, alcohol use and recreational drug use.

The most common types of cancer were also included in the survey during chart review. Patients diagnosed with malignant melanoma were specifically chosen for further chart review and an analysis of their follow-up care and health outcomes was carried out. This research study was reviewed and approved by the University of South Florida Research Integrity and Compliance Institutional Review Board (IRB) (Approval # 23920). The IRB determined that our study was approved for research involving materials (data, documents, records and specimens) that have been collected or will be collected solely for non-research purposes (such as medical treatment or diagnosis).

RESULTS

A total of 200 of 8,857 patients being managed at a free clinic reported a history of malignancy; ten (5.0%) patients were diagnosed with malignant melanoma. Of the patients diagnosed with malignant melanoma, 70% (N=7) were female and 30% (N=3) were male. The average age of patients was 52, all of whom are still alive. 10% (N=1) patient was Hispanic, 70% (N=7) of patients were not Hispanic, and 20% (N=2) of patients had unspecified ethnicity. In terms of race, 80% of patients (N=8) were white and 20% (N=2) had unspecified race. Employment status was not recorded for 30% (N=3) of patients. Of those with recorded

Table 1. *Demographics of Uninsured Patients with a History of Malignant Melanoma*

Patient	Gender	Age Range (Years)	Ethnicity	Race	Employment Status
A	Female	30-39	Not Hispanic	White	Unemployed
B	Female	40-49	Not Hispanic	White	Unknown
C	Female	40-49	Hispanic	White	Unemployed
D	Male	50-59	Not Hispanic	White	Unemployed
E	Female	50-59	Not Hispanic	White	Unemployed
F	Female	50-59	Not Hispanic	White	Employed
G	Female	60-69	Unspecified	Unspecified	Unspecified
H	Female	60-69	Not Hispanic	White	Employed
I	Male	60-69	Unspecified	Unspecified	Unspecified
J	Male	60-69	Not Hispanic	White	Unemployed

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employment status, 20% (N=2) of total melanoma patients were employed and 50% (N=5) were unemployed. Table 1 displays the demographics of these patients.

Date of initial melanoma diagnosis was not reported in 50% (N=5) of the ten patients. Initial curative treatment for 20% (N=2) of patients was surgical removal of the primary lesion; 20% (N=2) reported observation as opposed to treatment. The remaining 60% (N=6) of patients did not discuss the management of their melanoma with the primary care physician at the free clinic. Additionally, only 30% (N=3) of patients mentioned a history of melanoma screening to the free clinic physician. Table 2 presents the year of diagnosis, management, and prior melanoma screening for these patients.

Table 2. *Melanoma Diagnosis Year, Management and Mention of Prior Melanoma Screening in Uninsured Patients with a History of Malignant Melanoma*

Patient	Year of Diagnosis	Management	Mention of Prior Melanoma Screening
A	2008	Surgery	Yes
B	Unspecified	Unspecified	No
C	2017	Observation	Yes
D	2016	Unspecified	No
E	Unspecified	Unspecified	No
F	Unspecified	Unspecified	No
G	2016	Unspecified	Yes
H	2016	Surgery	No
I	Unspecified	Unspecified	No
J	Unspecified	Observation	No

Follow-up for recurrent lesions varied between patients but a commonly cited reason that prevented proper follow-up with a dermatologist and treatment in eight of the ten patients (80%) was financial restraint. When patients first presented at a free clinic, a total body skin exam was completed and documented in 40% (N=4) of cases. Despite financial concerns, patients presenting with atypical lesions were referred to a dermatologist or plastic surgeon for a biopsy and subsequent excision of questionable lesions. According to the patient charts, only one patient (10%) managed to pay for excision of several melanocytic nevi, as recommended by the free clinic physician. Remaining patients did not follow through free clinic provider-prescribed referrals. Despite their inability to address potentially malignant melanocytic lesions, patients continued to be seen at their respective free clinic for minor health concerns and pharmaceutical refills.

Table 3 displays tobacco use and alcohol use of uninsured patients with a history of melanoma. Of the ten patients, 40% (N=4) had never smoked tobacco and 10% (N=1) had an unspecified tobacco-use history. 50% (N=5) of patients are active smokers, 80% (N=4) of which had an unspecified pack year history and 20% (N=1) had a 1-10 pack year history. In terms of alcohol use, 50% (N=5) of patients have never had an alcoholic drink and 30% (N=3) had an unspecified alcohol-use history. 20% (N=2) are active alcohol drinkers, with one patient drinking an average of 1 drink per week and the other patient drinking an average of 2 drinks per week.

Table 3. *Alcohol and Tobacco Use of Uninsured Patients with a History of Malignant Melanoma*

Patient	Tobacco Use (Pack Years)	Alcohol Use (Drinks Per Week)
A	Active Smoker (1-10)	Current Drinker (2)
B	Active Smoker (Unspecified)	Unspecified
C	Active Smoker (Unspecified)	Never
D	Never	Never
E	Never	Never
F	Never	Never
G	Unspecified	Unspecified
H	Active Smoker (Unspecified)	Current Drinker (1)
I	Never	Unspecified
J	Active Smoker (Unspecified)	Never

DISCUSSION

Retrospective analysis of uninsured patients diagnosed with malignant melanoma revealed a lack of proper follow-up with a dermatologist or primary care physician after excision of primary lesions. Additionally, a few of the patients did not even receive primary treatment for melanoma, opting simply for observation. In general, total body skin exams are performed regularly with the hope of catching and treating melanoma early on, improving the patient's prognosis. Observation is not often the first-line option for patients diagnosed with definitive melanoma. On the other hand, 40% (N=4) of patients mentioned a diagnosis of melanoma to their primary care physician but management was either not discussed or not recorded in the patient's chart. This information is necessary because it changes management approaches and follow-up in melanoma patients. For instance, those who received radiation may be at higher risk for medication-induced side effects. If they did not receive any treatment, it would warrant more in-depth questioning to determine potential advancement of melanoma or widespread metastasis.

Due to an inability to afford indicated biopsies or excisions, uninsured patients may have worse outcomes such as recurrent melanocytic lesions or uncontrollable metastasis leading to terminal disease. Free clinic providers and staff should be cognizant of local dermatologists who provide subsidized services to those in need. Uninsured patients should also be directed to free clinics immediately after primary excisional surgery to receive recommended follow-up skin exams. By establishing with the free clinic early on, patients can be scheduled for regular follow-ups as recommended by the American Academy of Dermatology (AAD). Follow-up timing is dependent on the initial stage of melanoma, with the minimum interval being every six months for the first one or two years. After that, the recommendation is that they have a total body skin exam annually. According to the chart review, only 20% (N=2) of patients presented to their free clinic for skin

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cancer follow-up. The remaining patients presented with primary care complaints, with several of them presenting multiple times during the year. This indicates that they did not receive the minimal recommended annual total body skin exam.

Patients should be taught how to perform thorough monthly self-skin-exams using the Asymmetry, Borders, Color, Diameter, Evolution (ABCDE) method.[16] Proper inspection and early detection have been proven to be key in determining the prognosis of patients with malignant melanoma. Thus, keeping patients educated will be more likely to improve health outcomes by catching melanocytic recurrences before they are able to metastasize. In addition, they should be extensively taught about the many steps they can take to avoid unnecessary sun exposure and ultraviolet radiation. Proper awareness and education can then allow for the delivery of overall better healthcare to patients with a higher risk of being diagnosed with recurrent malignant melanoma.

In our study, the percentage of uninsured patients with a history of melanoma was approximately 5% of total malignancies, much higher than the 1% prevalence of melanoma in the general population. This leads one to question whether or not more uninsured patients are diagnosed with melanoma or if a higher percentage of them seek free clinic healthcare. If more uninsured patients are diagnosed with melanoma, it further supports the need for increased education on melanoma-prevention strategies. This would be especially necessary for patients with a history of melanoma. The goal would be to reduce the risk of recurrence in those with a previous diagnosis. In order to determine an accurate relationship between melanoma prevalence and a lack of insurance, more data needs to be collected and analyzed. For this reason, it becomes imperative that research be done on the uninsured population, despite the fact that they are not a well-tracked part of the healthcare system.

LIMITATIONS OF THE STUDY

All of the data was collected from free clinics in Tampa, Florida, USA. This limits the reliability of the data because skin cancer is more prevalent in this "Sunshine State" of the United States due to increased sun exposure, which is an important risk factor for the development of melanoma. It is questionable whether or not these statistics can be applied to areas where sun exposure is not as big a factor. Another limitation of this study is unrecorded data. This includes race, employment and household status, all of which were not recorded for a subset of patients with melanoma. The sample size is also a limiting factor in this study; only two years of data were recorded and analyzed in this paper. The current goal is to collect data from the following year such that future analyses on the prevalence of malignant melanoma in the uninsured population can be done on larger sample sizes.

Through the education of healthcare providers, free clinics can deliver higher quality dermatology management to patients by following recommended standards to reduce the risk of recurrence. This study indicates that the prevalence of melanoma in the uninsured population is significantly higher than that of the general population, further supporting the importance of educating patients on melanoma risk factors. Risk factor prevention can help reduce the incidence of melanoma in this patient population. Educating those with a history of melanoma on skin cancer monitoring can aid in the diagnosis of a recurrence early on, if it occurs.

It is our hope that a reduction in melanoma among the uninsured will reduce the healthcare burden of cancer morbidity and mortality, especially once cancer has metastasized. This data will be presented to free clinic providers, along with skin cancer prevention strategies they can discuss with their patients. Additionally, we will be providing them with the recommended AAD total body skin exam follow-up timeline in order to increase the likelihood that these patients get the proper long-term management.

CONCLUSION

Free-clinics should be cognizant of local dermatologists who provide subsidized services to those in need due to the higher prevalence of melanoma among the uninsured. Patients should also be directed to free clinics immediately after surgery to receive recommended follow-up skin checks. With education, free-clinics can deliver higher quality dermatology management to patients by following recommended standards.

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CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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Case Report

Allergic Contact Dermatitis by Beryllium Chloride as Unique Sensitivity: A Case Report

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ABSTRACT

Beryllium can be found in silver alloy, in costume jewelry and in dental prosthesis. It is also used in aerospace industry and might be also found in precision instruments. Pure contact dermatitis to Beryllium has never been described as in this case associated with allergic contact dermatitis to jewelry. Most reports of Beryllium contact dermatitis are related to dental prosthesis and most of the cases we have seen Beryllium allergic contact dermatitis is associated with other positive allergens. We believe that this metal should be added to the dental screening as according to our findings.

Keywords
Beryllium; Jewelry; Allergy; Skin allergy; Allergic contact dermatitis.

INTRODUCTION

Beryllium is used in the aerospace industry, is present in electronic components, ceramic industry, tools, golf clubs, precision instruments, and even in missiles. Beryllium is often associated in copper or aluminum alloys, usually at 2%.

It can be found in silver alloy, in costume jewelry, and in dental prosthesis. Beryllium has the ability to absorb heat thus it is also used in molds for casting. The insert alloy containing beryllium allows better cooling of the molds.

In structural applications, the combination of high flexural rigidity, thermal stability, thermal conductivity and low density (1.85 times that of water) makes beryllium metal a desirable aerospace material for aircraft components, missiles, space craft, and satellites. Because of its low density and atomic mass, beryllium is relatively transparent to X-rays and other forms of ionizing radiation; therefore, it is the most common window material for X-ray equipment and components of particle detectors.

Many dental prosthetic restorations placed in the Europe and United States are made of a variety of base metal alloys; as gold, silver, platinum, palladium, ruthenium, iridium, rhodium, and osmium and beryllium is added to some base metal alloys for use in crowns, bridges and in partial denture frameworks. Incorporation of beryllium into the base metal alloy formulation facilitates castability (lowering the melting temperature and surface tension) and increases the porcelain metal bond strength. Beryllium also allows the alloys to be electrolytically detachable for bonding veneers in conjunction with resin-bonded restorations.

Contact dermatitis to beryllium has been reported in recent years,[1,2] we have found 39 positivities in 1200 patients studied with the batteries of dental screening (chemotechnique) and special metal series, which we use to detect sensitivity to dental metals, where the beryllium chloride is at 1% in petrolatum.

However, this is the first time we have seen sensitivity to beryllium with some premises that makes it unique:

1. Beryllium sensitivity in this patient is not associated with any other sensitivity.
2. The patient reported intolerance to jewelry for 11-years.
3. The patient is not carrying any kind of dental nor surgical prostheses and in her adolescence did not carry orthodontic brackets.[3]
4. In her job as a journalist, there is no known contact with

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beryllium past or present.

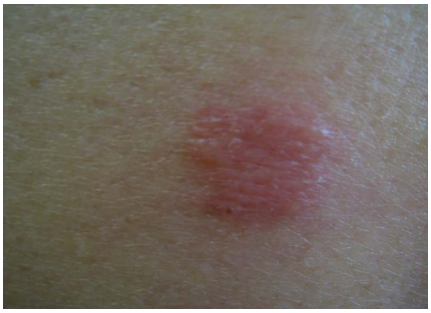
5. For clinical history, there are only etiological relationship with jewelry and in this section are the possible causes of sensitization to beryllium.

CASE REPORT

A 33-year-old female reported to our department for the study of intolerance to earrings. In the family history, there is one brother with bronchitis, rhinitis, and asthma episodes. The patient complains about intolerance to certain earrings from the age of 22. She attends our department with a picture of an erythematous, edematous plaque affecting both ear lobes.

The clinical picture varies with different posts used, and it starts itching a few days of use of certain outstanding, appearing later erythema, papules, edema in the area of contact with the earrings. On avoiding the suspected earrings the clinical findings disappeared (Figure 1). She had no relevant history of dental work and she works as a journalist in television (TV).

Figure 1. *Contact Dermatitis to Beryllium Chloride on the Ear Lobe on Response to the Use of a Certain Earing*



In our Cutaneous Allergy Unit, we studied the patient with the following allergens: European Standard, dental screening (chemotechnique diagnostics, Vellinge, Sweden) and special metal series (Martí-Tor, Barcelona, Spain). Patch tested were applied on the back with Finn Chambers® (Epitest Ltd Oy, Tuusula, Finland) suspended on Scanpor® tape (Norgesplaster A/S, Vennsela, Norway). Reading were carried out on D2 and D4 according to the criteria of the International Contact Dermatitis Research Group (ICDRG), with the following results: See Figure 2.

Figure 2. *Response to Patch Test: +++ to Beryllium Chloride on Day 15*

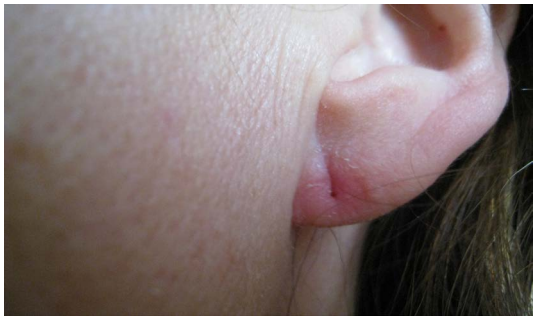


Table 1. *Readings of the Allergic Contact Dermatitis Different Series at D2 and D4 According to the Criteria of the International Contact Dermatitis Research Group*

ALLERGENS	D2	D4	D15
European Standard	-	-	-
Dental Screening (Chemotecnique)	-	-	-
Special Series of Metals	Beryllium +	Beryllium++	Beryllium +++

Since the patch test reaction to beryllium might be delayed,[3] we performed an additional reading at D15.

The manufacturer of two types of slopes has given us the composition: Be 2%; Co+Ni 0.2%; Pb 0.02% Max and Cu balance.

CONCLUSION

Beryllium is a health and safety issue for workers. Exposure to beryllium in the workplace can lead to a sensitization immune response and can over time develop chronic beryllium disease (CBD). The National Institute for Occupational Safety and Health (NIOSH) in the United States researches these effects in collaboration with a major manufacturer of beryllium products. The goal of this research is to prevent sensitization and CBD by developing a better understanding of the work processes and exposures that may present a potential risk for workers and to develop effective interventions that will reduce the risk for adverse health effects. NIOSH also conducts genetic research on sensitization and CBD, independently of this collaboration. The NIOSH Manual of Analytical Methods contains methods for measuring occupational exposures to beryllium.

We believe that this metal must be contained in the dental screening as according to us in the last 20-years,[4] between 10% and 15% of dental prostheses placed in different countries contain beryllium, and this is the reason why we may continue watching sensitivities in the coming years.

The special series of allergens for study possible sensitization to metals in jewelry; electrical conductors, tools; must have beryllium; because this metal is broad used and have a substantial capacity to sensitize.[5]

We had not found its use in jewelry and we believe this case can be useful in some patients with symptoms of intolerance to costume jewelry without any positive result of metals tested regularly.[6,7] We strongly believe that beryllium should be included in a screening tray for jewelry induced contact dermatitis.

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