

## Pityriasis Rotunda Associated with Hepatocellular Carcinoma

Young Il Jeong, M.D., Dong Kyung Lee, M.D., Sung Eun Chang, M.D., Mi Woo Lee, M.D.,  
Jee Ho Choi, M.D., Kee Chan Moon, M.D., Jai Kyoung Koh, M.D.

*Department of Dermatology, Asan Medical Center, University of Ulsan College of Medicine,  
Seoul, Korea*

Pityriasis rotunda is an unusual disease characterized by perfectly circular or oval-shaped dyschromic patches with a scaling surface. Histologically, the lesions resemble those of ichthyosis vulgaris. They typically involve the abdomen, the trunk and extremities. The etiology of the disease remains unknown. Pityriasis rotunda has been most commonly associated with tuberculosis, nonlymphoproliferative neoplasms such as hepatocellular carcinoma and gastric carcinoma, and malnutrition. Rarely, hepatic cirrhosis, leprosy, endometriosis, and familial G6PD deficiency can be associated with pityriasis rotunda. We describe here a patient with pityriasis rotunda associated with hepatocellular carcinoma. Pityriasis rotunda can be a presenting sign of hepatocellular carcinoma in the setting of chronic liver cirrhosis.

(Ann Dermatol 16(1) 42~44, 2004)

---

*Key Words:* Pityriasis rotunda, Hepatocellular carcinoma

### INTRODUCTION

Pityriasis rotunda is a rare skin condition that manifests as scaly, round, hyperpigmented lesions on the trunk, buttocks, and thighs. It is usually reported in Far Eastern and South African people and in West Indian blacks, but rare in Caucasians. Histologically, the lesions resemble those of ichthyosis vulgaris. Malignancies are diagnosed in about 6% of cases, with hepatocellular and gastric carcinoma being the most frequent neoplasms.

We herein describe the patient who was a hepatitis B virus carrier and had hepatocellular carcinoma, and developed pityriasis rotunda on the trunk.

### CASE REPORT

A 56-year-old man was referred for the evaluation of numerous round patches on the trunk from the department of internal medicine. He was admitted for the transarterial chemoembolization of his hepatocellular carcinoma diagnosed in July 2003. He was a carrier of hepatitis B virus and diagnosed as having liver cirrhosis seven years ago. He remembered the skin condition had developed several days ago and denied any itching sensation, pain or tenderness. The family history was unremarkable.

On skin examination, multiple, well-demarcated, 1 to 10 cm-sized, atrophic, shiny, scaly, round, confluent patches were found mainly on the anterior trunk such as chest, abdomen and flanks (Fig. 1). The lesions were sharply demarcated from the surrounding normal skin. There was no erythema or other signs of inflammation. A complete blood count and serum chemistry panel were reminiscent of decreased hepatic function. A potassium hydroxide preparation and Sabouround's agar culture for fungus gave negative results. Skin biopsy taken from the abdominal lesion revealed compact orthokeratosis,

---

Received October 14, 2003

Accepted for publication January 8, 2004

**Reprint request to:** Mi Woo Lee, M.D., Department of Dermatology, Asan Medical Center, University of Ulsan College of Medicine, 388-1 Poongnap-dong, Songpa-gu, Seoul 138-736, Korea

Tel. 82-2-3010-3460, Fax: 82-2-486-7831

E-mail. miumiu@amc.seoul.kr

atrophic epidermis with diminished or absent granular layer, slightly increased basal pigmentation, mild basal vacuolar degeneration with pigment incontinence, mild telangiectasia in the papillary and reticular dermis (Fig. 2A and 2B). Considering the history, morphology of the lesions, and histopathological findings, a diagnosis of pityriasis rotunda was made. During the work-up period for the lesions, the patient died of hepatic failure due to his hepatocellular carcinoma.

## DISCUSSION

Pityriasis rotunda was first described by Japanese authors in 1906<sup>1,2</sup>. Since then, its occurrence has been reported in various ethnic groups. The large



Fig. 1. multiple, well-demarcated, 1 to 10 cm-sized, atrophic, shiny, scaly, round, confluent patches on the chest and abdomen

majority of the reported patients belonged to the pigmented races. However, familial occurrence with a possible autosomal dominant inheritance has been reported exclusively in whites<sup>3</sup>. In about two thirds of all reported pigmented patients, an association with a systemic illness had been established. The illnesses found to be most commonly associated with pityriasis rotunda include tuberculosis, hepatocellular and gastric carcinoma, and malnutrition<sup>4</sup>. Less severe associated disorders included hepatic cirrhosis, leprosy, endometriosis, and familial G6PD deficiency<sup>4</sup>.

Pityriasis rotunda affects both men and women. The usual age at onset is between 20 and 45 years (extremes are 7 and 76 years)<sup>5</sup>. Duration of the disease varies from several months to more than 20 years. Our patient reported that the lesions had developed several days ago but, the statement was suspicious. Typically the symptomless lesions are seen as perfectly circular patches that are hypopigmented in white patients and hyperpigmented in black or Oriental patients. Oval patches have been described in some patients. Typically the lesions involve the trunk and extremities, but not the face. Their diameter may vary from 0.5 to 28 cm, and the total number of lesions is variable<sup>5</sup>. In black and Oriental patients the number of lesions may vary from 1 to 28 lesions; in white patients the lesions are more numerous.

The disease has been classified into two groups depending on whether the patient is white or pigmented race. Type I disease in this classification is composed of Black or Oriental patients, who have less than 30 hyperpigmented lesions in a non-familial

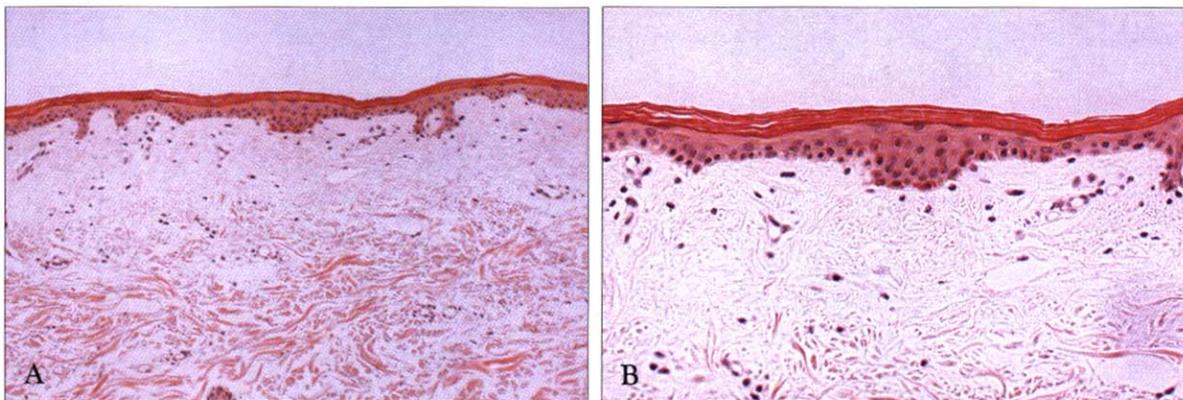


Fig. 2. (A, B). compact orthokeratosis, atrophic epidermis with diminished or absent granular layer, slightly increased basal pigmentation, mild basal vacuolar degeneration are seen (A: H&E  $\times$  40, B: H&E  $\times$  100)

pattern and in association with systemic illness or malignancies<sup>6</sup>. Type II disease is composed of white patients with more than 30 hypopigmented lesions with familial occurrence and with no association with internal disease<sup>6</sup>.

In most reports, histopathologic examination revealed hyperkeratosis with a thinned or absent granular layer and increased pigmentation of the basal layer. Slight pigment incontinence and a sparse perivascular lymphocytic infiltrate have also been described<sup>7</sup>. In our patient, the histopathologic features were compatible with previous reports. Vacuolar degeneration of basal cell layer and slight pigment incontinence were also seen.

The cause of pityriasis rotunda is unknown. Some authors suggested that it could be a variant of acquired ichthyosis<sup>3</sup>, because they found histologic features similar to ichthyosis vulgaris. Swift and Saxe<sup>7</sup> suggested that undernutrition was the cause, but this theory needs further confirmation. An infective cause is unlikely because investigations to find organisms have consistently had negative findings<sup>8</sup>. In the immunohistological characterization of a Japanese case, Hashimoto et al.<sup>9</sup> said that there was a marked decrease in filaggrin and loricrin expression in the affected regions. The localized downregulation of these proteins indicate that the dysfunction of the terminal differentiation process may play a significant role behind the patch formation of hyperkeratotic regions.

In the differential diagnosis<sup>10</sup>, tinea versicolor, erythrasma, other dermatomycoses, leprosy, fixed drug eruptions, pityriasis alba, and pityriasis rosea must be considered.

Treatment of pityriasis rotunda is difficult. Some patients respond to emollients. Others note a seasonal variation in their condition, with improvement during the summer and recurrence during the winter<sup>10</sup>. Success with both topical and systemic retinoids has been reported<sup>10</sup>. The lesions may also resolve spontaneously, particularly when the associated systemic condition is treated<sup>10</sup>. In our patients, no therapy was instituted.

In Korean literature of dermatology, there was three cases of pityriasis rotunda associated with liver cirrhosis<sup>11,12</sup>. But, there was no case associated with

hepatocellular carcinoma. To our knowledge, this is the first case report of pityriasis rotunda associated with hepatocellular carcinoma in Korea.

## REFERENCES

1. Toyama T: Uber eihe schuppene, pigmentierte kreisrunde hautaffektion. *Jpn Z Derm Urol* 1906; 6:2.
2. Matura U: Uber kreisrunde pityriasis. *Jpn Z Derm Urol* 1906;6:3-4.
3. Lodi A, Betti R, Chiarelli G, Carducci M, Crosti C: Familial pityriasis rotunda. *Int J Dermatol* 1990; 29:483-485.
4. Pinto GM, Tapadinhas C, Moura C, Afonso A: Pityriasis rotunda. *Cutis* 1996;58:406-408.
5. Kahana M, Levy A, Ronnen M, Schewach-Millet M, Stempler D: Pityriasis rotunda in a white patient. Report of the second case and review of the literature. *J Am Acad Dermatol* 1986;15:362-365.
6. Grimalt R, Gelmetti C, Brusasco A, Tadini G, Caputo R: Pityriasis rotunda: report of a familial occurrence and review of the literature. *J Am Acad Dermatol* 1994;31:866-871.
7. Swift PJ, Saxe N: Pityriasis rotunda in South Africa: a skin disease caused by undernutrition. *Clin Exp Dermatol* 1985;10:407-412.
8. Weiss RM: Pityriasis rotunda. *Arch Dermatol* 1989;125:1002.
9. Hashimoto Y, Suga Y, Chikenji T, et al.: Immunohistological characterization of a Japanese case of pityriasis rotunda. *Br J Dermatol* 2003;149:196-198.
10. Grimalt R, Gelmetti C, Brusasco A, Tadini G, Caputo R: Pityriasis rotunda: report of a familial occurrence and review of the literature. *J Am Acad Dermatol* 1994;31:866-871.
11. Park JW, Seok DS, Song JY: Two cases of pityriasis rotunda associated with liver cirrhosis. *Kor J Dermatol* 1984;22:423-426.
12. Ahn SJ, Choi JH, Moon KC, Koh JK: Pityriasis rotunda associated with liver cirrhosis. *Kor J Dermatol* 1999;37:1120-1122.