Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 11, pp.41854-41855, November, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

CASE REPORT

GRANULOMA ANNULARE (GA) IN A DIABETES MELLITUS TYPE 1: REPORT OF A CASE AND REVIEW OF THE LITERATURE

[1]Amer O. AlAli, [2]Mohammed Buraik, [1]Mohammed Abdo A. Soeid, [3]Jalal Hakami, [3]Rayan H. Bakri, [3]Majed A. Alibrahim, [3]Haitham M. Alhazmi and [4,*]Nasir A.M. Aljurayyan

[1]Consultant Pediateric Endocrine King Fahad Central Hospital (KFCH), Jizan Saudi Arabia
[2]Consulatnat Dermatologist and Dermatopathologist KFCH, Jizan Saudi Arabia
[3]Pediateric Resident KFCH, Jizan Saudi Arabia
[4]Professor of Pediateric Endocrinology, Medical College and King Khalid University Hospital (KKUH), King Saud University (KSU) Riyadh Saudi Arabia

ARTICLE INFO

Article History:
Received 14th August, 2016
Received in revised form
29th September, 2016
Accepted 17th October, 2016
Published online 30th November, 2016

Key words:

Diabetes mellitus type 1(DM1),
Granuloma annulare (GA),
Necrobiosis Lipoidica (NL), Children.

ABSTRACT

We describe a 9 years old female with poorly controlled diabetes mellitus type 1 (DM1). She was noted to have a painless skin rash at leg which was provoked by mild trauma when she was 5 years of age. Biopsy showed granuloma annulare (GA) which is a rare skin manifestation of diabetes mellitus.

Citation: Amer O. AlAli, Mohammed Buraik, Mohammed Abdo A. Soeid *et al.* 2016. "Granuloma annulare (GA) in a diabetes mellitus type 1 : Report of a case and review of the literature", *International Journal of Current Research*, 8, (11), 41854-41855.

INTRODUCTION

Necrobiosis Lipoidica and granuloma annulare are granulomatous skin conditions that have been traditionally associated with diabetes mellitus. They represented similar histological findings. It appears as a waxy, atrophic, yellowish plaque with overlying telangiectasia and a brown boarder. Although usually asymptomatic, it may be extremely painful, especially if ulcerated. The condition was first described in 1929 (Barnes *et al.,* 2014, George and Walton 2016, Reid *et al.,* 2013). We describe a 9 year-old female child with DM1 who developed GA. To our knowledge this is the first case report of Granuloma annulare in children with Dm1 in Saudi Arabia.

CASE REPORT

A 9 year old with uncontrolled DM1 diagnosed at the age of 4 years. She was noted to have skin pigmentation over her left leg (figure1) that appear post mild trauma at the age of 5 years. It was progressive in size but never regress and remained painless. There was no other skin lesion. She was otherwise healthy apart from her diabetes. Skin biopsy showed (figure2) features consistent with GA with mid-dermal lesion composed of histiocytic cellular infiltrate, reaches the superficial subcutaneous fatty tissue in poorly palisading granulomata pattern admixed with scattered lymphocyte and eosinophils. No definite collagen degeneration seen.

DISCUSSION

Granuloma annulare (GA) is a skin disorder presenting annular groups. Traditionally, it has been thought to be associated with diabetes. It has also been reported in association with sarcoidosis, inflammatory bowed disease, autoimmune thyroiditis, monoclonal gammopathy and in healthy individuals (Toole *et al.,* 1999). Granuloma annulare (GA) can be subdivided into 4 types: localized, subcutaneous, generalized and perforating. Subcutaneous granuloma annular (SGA) is a rare and tend to occurs almost exclusively in children. It was reported as early as 2 years old in a girl with DM1 and SGA. (Agrawal *et al.,* 2012), although, it can be the first clinical manifestation of type one diabetes mellitus in

Corresponding author: Nasir A.M. Aljurayyan,
Professor of Pediateric Endocrinology, Medical College and King Khalid University Hospital (KKUH), King Saud University (KSU) Riyadh Saudi Arabia.

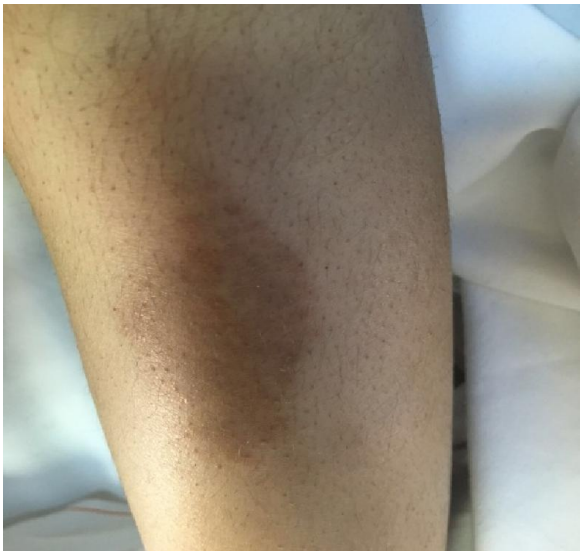

Figure 1. A well-demarcated brownish to slightly erythematous indurated plaque on the left leg

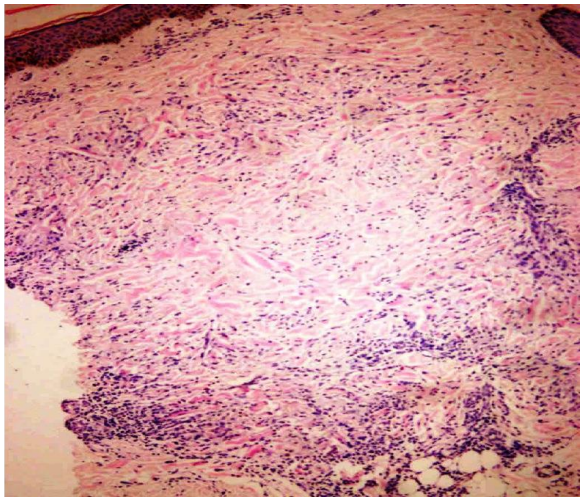

Figure 2. A photo of the biopsy from the lesion

children (Spicuzza *et al.,* 2005) the association between GA and diabetes mellitus is still controversial, but though to be more common in those with poor controlled (O' Toole *et al.,* 1999). SGA consider as a benign granulomatous inflammatory disease that can present as a rash or a mass (Agrawal *et al.,* 2012) and it usually involves the skin or deeper tissues (Requena and Fernandez-Figueras, 2007), those lesions more common to present on the extensor aspect of the limbs (Vandevenne *et al*., 1998), but can occur in scalp, extremities, palmar surface of hands (rare) as a single or multiple lesions (Felner *et al.,* 1997). Its etiology is unknown (Thornsberry and English, 2013) and most of the time it is isolated lesion but can be secondary to other diseases like DM, viral and bacterial infections, sarcoidosis and, and malignancy, tuberculosis, fungal infection, and autoimmune (O' Toole *et al.,* 1999). It is well known that those lesions GA are slowly growing and hence diagnosis can be delayed for years like our patient (Felner *et al.,* 1997). However, sometimes SGA has a rapid growth. Diagnosis can be supported by MRI which can show infiltrative lesions (Agrawal *et al.,* 2012) but definitive diagnosis required skin biopsy that differentiate between GA and other similar skin lesion that known to be cause a similar lesion in DM or non DM as Necrobiosis lipodica diabetocrum malignant diseases such as synovial sarcoma, malignant peripheral nerve sheath tumor, fibrosarcoma, liposarcoma, malignant fibrous histiocytoma, dermatofibrosarcoma protuberans, and rhabdomyosarcoma, as well as benign diseases such as fibrous histiocytoma, hemangioma, nodular fasciitis, peripheral nerve sheath tumor, granuloma annulare, plexiform fibrohistiocytic tumor, fibromatosis, and infantile myofibromatosis (Reid *et al.,* 2013, George and Walton 2016, Thornsberry 2013). The treatment is challenging and often difficult. Spontaneous resolution have been reported frequently but sometimes might need course of intra-lesional steroid injections (W. Alajroush *et al.,* 2016) or surgery and Dapsone (Martı´n-Sa´ez *et al.,* 2008). An experiences dermatologist should be involved early to diagnose and manage. The various therapeutic approaches are summarized by Reid *et al.* (2013) in their recent review.

Acknowledgment: The authors would like to thank Miss Hadeel N. Aljurayyan for her assistance in preparing the manuscript.

Conflict of interest: The authors have no conflict of interest to declare

REFERENCES

Agrawal, A.K., Kammen, B.F., Guo, H., Donthineni, R. 2012. An Unusual Presentation of Subcutaneous Granuloma Annulare in Association withJuvenile-Onset Diabetes: Case Report and Literature Review, *Pediatric Dermatology,* 29(2) 202–205.

Barnes, C.J., Davis, L., Griffing, G.T., Butler, D.F., Chan, E.F., Raugi, G.J. 2014. Necrobiosis Lipoidica http://emedicine. medscape.com/article/1103467.overview

Felner, E.I., Steinberg, J.B., Weinberg, A.G., 1997. Subcutaneous granuloma annulare: a review of 47 cases. *Pediatrics,* 100 (6), 965–967.

George, S. and Walton, S. 2016. Necrobiosis Lipoidica B, *J diabetes,* 16; 6-9.

Martı´n-Sa´ez, E. *et al*., 2008. Efficacy of dapsone in disseminated granuloma annulare: a case report and review of the literature. *Actas Dermosifiliogr*., 99 (1), 64–68. McDermott, M.B., Lind, A.C., Marley

O'Toole EA, Kennedy V, Nolan JJ, Young MM , Rogers S, Barners, L. 1999. Necrobiosis Lipoidica only minority of pateint have diabetes mellitus, *Clin. Dermatol.,* 24:237-46.

Reid, S.D., Ladizinski, B., Lee, K., Baibergenova, A., Alavi, A. 2013. Update on Necrobiosis Lipoidica: a review of etiology, diagnosis and treatment options, *J Am Acad Dermatol*., 69;783-91.

Requena, L., Fernandez-Figueras, M.T. 2007. Subcutaneous granuloma annulare. *Semin. Cutan. Med. Surg*., 26 (2), 96–99.

Spicuzza, L., Salafia, S., Capizzi, A., Vitaliti, G., Rotolo, N., Leonardi, S., *et al*. Subcutaneous granuloma annulare of the scalp: a case report and case review. *Cutis.,* 76 (6), 377–382.

Thornsberry, L.A., English, J.C. 2013. Etiology, diagnosis, and therapeutic management of granuloma annulare: an update. *Am. J. Clin. Dermatol*., 14 (4), 279–290.

Vandevenne, J.E., Colpaert, C.G., De Schepper, A.M. 1998. Subcutaneous granuloma annulare: MR imaging and literature review. *Eur.Radiol.,* 8 (8), 1363–1365.

Waleed Alajroush, 2016. Mohammad Abuabat A rare presentation of subcutaneous granuloma annulare in an adult patient; A case report. *Science Direct Journal of Dermatology & Dermatologic Surgery*, 20, 142–145.

****