Multiple Papules in a Child

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CASE SUMMARY

History

A one-year-old Chinese male infant presented with an asymptomatic papular eruption since three months of age. The eruption involved mainly the face, neck, upper extremities and upper torso. Early lesions were reddish-brown in colour that later changed to yellow. The lesions were progressively increasing in number and size. He was otherwise healthy and had normal developmental milestones. There was no family history of similar condition or other significant skin diseases.

Physical examination

There were multiple, discrete papules over the face, neck, upper arms, and upper trunk. The majority of lesions measured 2-5mm in diameter (Figure 1). The largest one over the left shoulder measured 7mm (Figure 2). Some lesions were brownish, while some had a

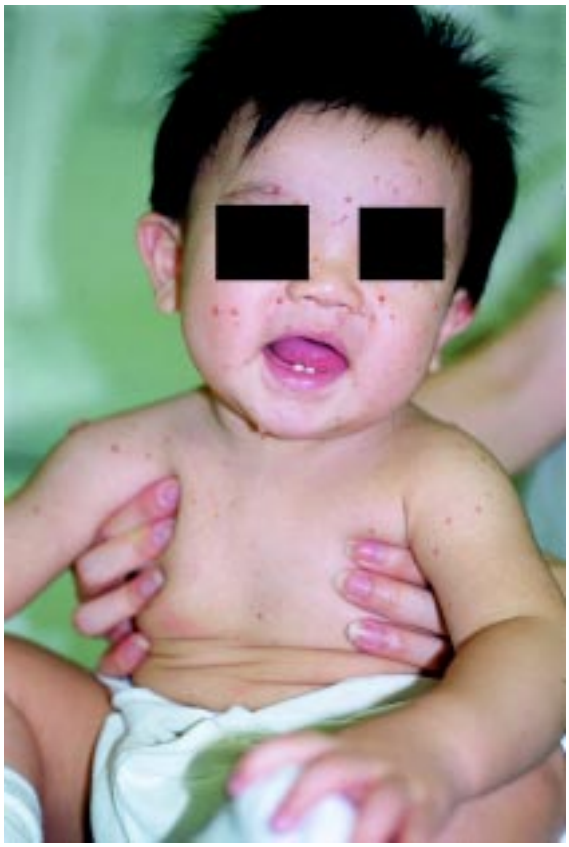

Figure 1: Multiple yellowish brown papules over face and upper trunk

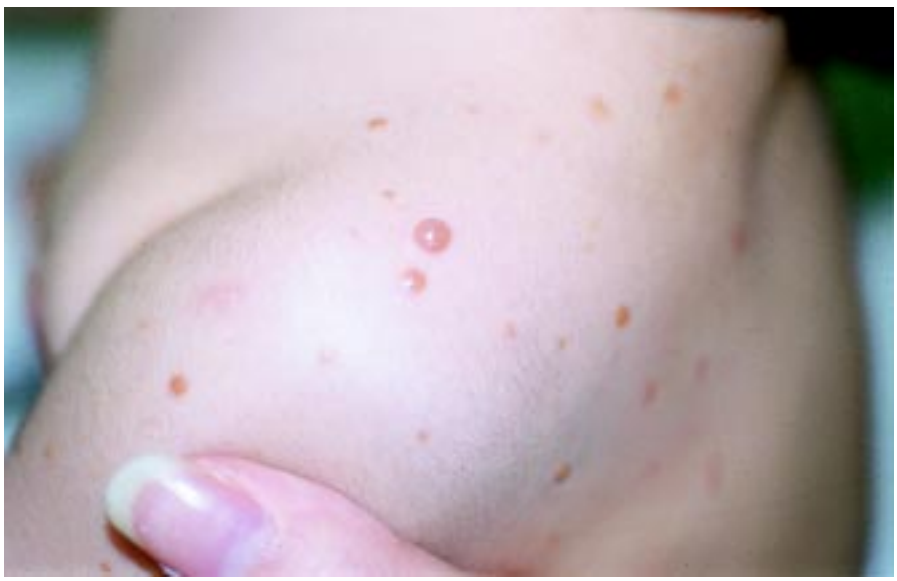

Figure 2: Largest papule (7mm in diameter) over left shoulder

yellowish hue. Mucous membrane was not affected. Darier's sign was negative. The rest of the physical examination was normal. In particular, there were no hepato-splenomegaly, lymphadenopathy, or skeletal abnormality. Ophthalmological assessment showed no evidence of ocular involvement; iris and fundi were normal and intra-ocular pressure was not increased. There was no evidence of neurofibromatosis.

Investigations

Skin biopsy showed dermal infiltrate of histiocytes with abundant eosinophilic cytoplasm, intermingled with Touton giant cells and scanty eosinophils. Occasional histiocytes showed cytoplasmic vacuolation. No mitotic figure was seen. Overlying epidermis was unremarkable. Giemsa stain showed scattered mast cells. S100 stain was negative. Complete blood count and serum lipid were all within normal limits.

Diagnosis

The diagnosis was multiple juvenile xanthogranulomata of the small nodular form.

Management

Patient's parents were given explanation and reassured. No specific treatment was given.

REVIEW ON JUVENILE XANTHOGRANULOMA

Juvenile xanthogranuloma (JXG) is a benign, self-limiting disease of infants and children, rarely of adults. It is characterized by solitary or multiple yellow to reddish-brown papules and nodules in the skin and other organs. The lesions consist of histiocytic infiltrate with varying degrees of lipidation in the absence of metabolic abnormalities. Pathogenesis is unclear.

Historical background[1]

The condition was first termed nevoxanthoendothelioma in 1912 by McDonough in describing yellowish red nodules in infants that spontaneously resolve. The term juvenile xanthogranuloma (JXG) was coined by Helwig & Hackney in 1954 to describe the histologic findings of lipid-laden histiocytes and giant cells. Adult form of JXG was first noted in 1963.

Incidence

JXG is the most common form of non-X histiocytosis. Commonly lesions appear in the first year of life: at birth (20-30%), <6 months (50%), <1 year (80%).[2] Adult cases have been rarely reported in the literature. There is no sex predilection or familial tendency.

Clinical features

The usual features of the condition are its onset in infancy, sudden appearance of lesions, and spontaneous regression over 3 to 6 years.

Two forms have been described: a small nodular form and a large nodular form.[1]The small nodular form presents as numerous (up to 100), firm, asymptomatic, small (averaging 2 to 5 mm in diameter), hemispheric lesions. They are red-brown at first and then quickly turn yellowish. The lesions are mainly located on the upper part of the body (face, neck, scalp and upper trunk). Mucous membranes are seldomly involved. There is frequent association with cafe au lait spots.

Ocular involvement is the most common extracutaneous manifestation reported. Its frequency has been quoted as up to 10% of cases in one report.[3] However Chang and colleague reviewed eight cutaneous JXG series from 1959 to 1994.[4] Of 260 patients in these series, only one had intraocular involvement (0.4%). Two retrospective series describing patients with ocular JXG were also reviewed.[4] A total of 39 cases of ocular JXG have been reported. At least 16 (41%) of which had cutaneous disease. Ocular lesions may precede or follow the cutaneous lesions. Iris involvement may lead to spontaneous haemorrhage in the anterior chamber. Secondary glaucoma and blindness may pursue unless the condition is recognized in the early stages and satisfactory treatment instituted. Corneal and orbital involvement will result in epibulbar lesions and proptosis respectively. Survey from ophthalmologists suggested that ophthalmological screening of patients with JXG should be particularly targeted to patients with risk factors of multiple skin lesions, new diagnosis and age of 2 years or younger.[4]

The large nodular form is less frequent. Lesions are usually solitary or few in number. They are generally round, 10 to 20 mm in diameter, translucent, red, and show telangiectasia on their surface. There may be mucosal involvement. Systemic involvement is rare which includes lungs, bones, kidneys, pericardium, colon, ovaries, and testes. Associations with

neurofibromatosis, myelogenous leukemia and urticaria pigmentosa have been reported.

Histopathology

Early lesions may show large accumulations of histiocytes without lipidation intermingled with a few lymphoid cells and eosinophils. Mature lesions showed granulomatous infiltrates containing foamy cells, foreign body giant cells, and Touton giant cells. These were mainly distributed in the superficial dermis and on the border of infiltrate. There may be eosinophils, plasma cells, and neutrophils scattered throughout the lesion. Older, regressing lesions may show proliferation of fibroblasts and fibrosis. S-100 staining of histiocytes is negative.

Electron microscopy

In early lesions, the macrophages contain irregular nuclei & complex pseudopodia. In mature lesions, lysosomal structures containing lipid are found inside macrophages. Lipid material as vacuoles are not bound by trilaminar membranes. There is no Langerhans granule.

Differential diagnosis

Differential diagnoses include nodular urticaria pigmentosa, benign cephalic histiocytosis, xanthoma disseminatum, histiocytosis X, and spitz naevus (for solitary lesion).

Treatment

No treatment is required for the cutaneous lesions as spontaneous resolution is the norm. Surgery or radiotherapy has been reported to be beneficial for ocular lesions.

Course and prognosis

Lesions involute over many months or years, leaving behind atrophic pigmented areas. General health is not impaired. Patients have normal physical and mental development. There is no metabolic disturbance. Prognosis is good in the absence of extracutaneous involvement or associated condition.

Summary

JXG are benign lesions generally limited to the skin. Reported associations with other disorders & visceral involvement are rare. Further investigations if indicated should be guided by clinical findings. The recommendation is to refer all patients for ophthalmologic assessment because eye lesions are often subtle and may have serious complications. One should be comfortable telling patients and parents that although JXG are usually self-limited, occasionally they persist, and less commonly they continue to erupt for years.

Learning points:

No treatment is necessary for the cutaneous lesions of JXG. Prognosis is good in the absence of associated conditions. Reassurance is usually all that is needed to alleviate parental anxiety.

References

1. Gianotti F, Caputo R. Histiocytic syndromes: A review. J Am Acad Dermatol 1985;13:383-404.
2. Guinnepin MT, Puissant A: Juvenile xanthogranuloma. G Ital Dermatol Venereol 1980;115:101.
3. Roper S, Spraker M. Cutaneous Histiocytosis Syndromes. Ped Dermatol 1985;3:19-30.
4. Chang MW, Frieden IJ, Good W. The risk of intraocular juvenile xanthogranuloma: Survey of current practices and assessment of risk. J Am Acad Dermatol 1996;34:445-9.