

MICROPAPULAR SARCOIDAL FACIAL ERUPTION IN A CHILD: GIANOTTI-TYPE PERIORAL DERMATITIS

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Abstract. The case is described of a boy aged 13 years reported with a diffuse facial micropapular eruption which had a granulomatous histology. The diagnosis is consistent with perioral dermatitis of the Gianotti type (4, 5). It is postulated that bubble gum was the cause of the condition, the most likely ingredient being the essential oils in the gum, which may actually be selectively absorbed by the follicle to produce a perifollicular granulomatous reaction. In this article we have added yet another possible cause for perioral dermatitis.

Key words: Facial eruption of Gianotti; Sarcoidal reaction; Bubble gum

Perioral dermatitis, rosacea, rosacea-like tuberculid and lupoid rosacea are clinical conditions with many similarities and with transitional forms. We had occasion to observe and follow an extensive facial eruption in a child which was characterized by sarcoidal micropapules involving not only the perioral area but also the cheeks, the forehead and the eyelids. Evidence is presented that the eruption was due to a type of contact reaction to bubble gum. A similar sarcoidal but more localized perioral eruption in children has been reported previously by Gianotti. In his case reports (4, 5) no attempt was made to elucidate the etiology of the dermatitis.

CASE REPORT

A 13-year-old boy presented on 16/3/76 with a 3-week history of a facial rash. This appeared simultaneously on the chin, forehead, nose, paranasal and perioral areas. Contactants suspected and elicited on the basis of anamnesis taken at the time were: "Pure and Simple" cooking spray used to cook dog's food, "Mortein" insect spray, household glue used for school projects, flea dog collar, fluoride tooth paste. There was nothing relevant in the past or family history. On examination there was an erythematous, slightly vesicular eruption. The areas of the forehead covered by the boy's rather long hair style were not involved and no other areas of the skin were affected. The mucosae, the nails and hair were normal. A diagnosis

of contact dermatitis with some element of photosensitivity was considered likely. He was given: topical sunscreen (Cinnamate type) and advised to avoid sunlight; topical betamethasone ointment and "Simple Soap". He was also advised to avoid contact with the above-mentioned external agents. Notwithstanding these measures, the eruption persisted. He had used the betamethasone ointment for less than 3 weeks. During the following months, the morphology of the rash changed and papular slightly scaly lesions appeared on the site of the former erythema and vesiculation. Skin scraping for fungi (direct examination

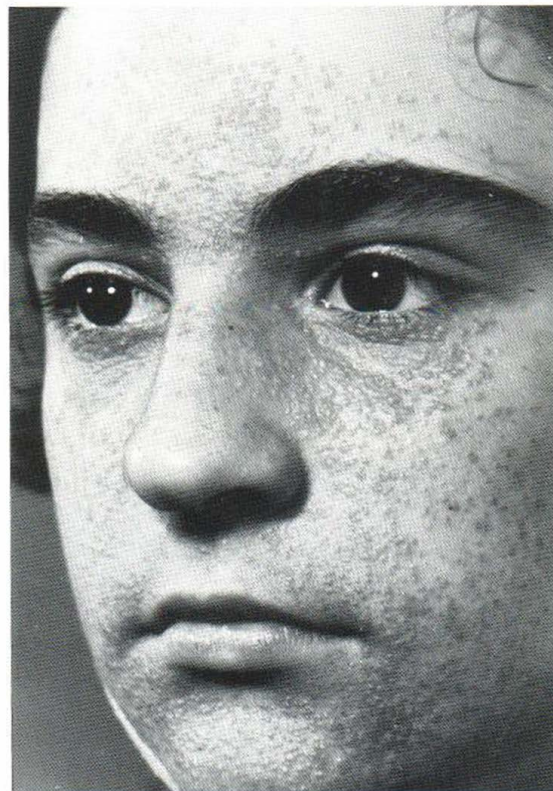


Fig. 1. Micropapular eruption. Note that the upper forehead usually covered by the hair is free of the eruption. The eyelids are involved.

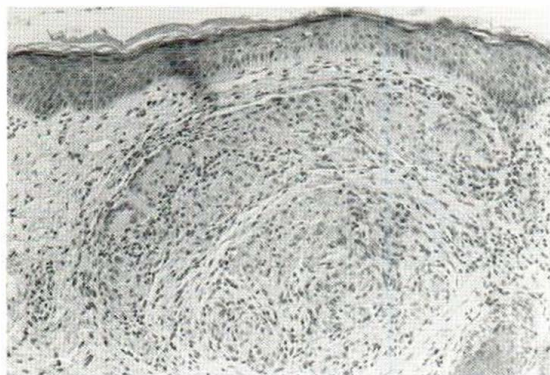


Fig. 2. Under a stretched epidermis there is a free sub-epidermal zone, bordering the well circumscribed sarcoid-like granuloma, with some giant cells evident in the left upper corner.

and culture); negative. Of the routine patch tests only mercury gave a positive result. Photo patch tests were negative. Various general investigations gave normal results: Chest X-ray; FBC, ESR; fasting blood sugar; porphyrin screen tests; VDRL test; total proteins: 7.4 g%; serum electrophoresis; quantitation of immunoglobulins; ANF; micro-urine; biochemical profile.

A biopsy taken (9/7/76; 4½ months after the appearance of the eruption) showed non-caseating epithelioid cell granulomata in the superficial and mid-dermis. Langhans-type giant cells were present. There was a tendency to perifollicular localization. Acid-fast bacilli were absent. The appearance suggested "granulomatous rosacea". At this stage, diascopy showed the presence of lupoid papules. The patient was referred to Dr E. Kocsard for consultation. It was whilst supposedly waiting in the consulting rooms on one occasion that the patient disappeared to buy bubble gum (of which he was an ardent consumer). This brought to notice the likelihood of the gum as a possible contact agent. The diagnosis of "perioral dermatitis" of bubble gum origin was now postulated. The child was now advised against chewing bubble gum.

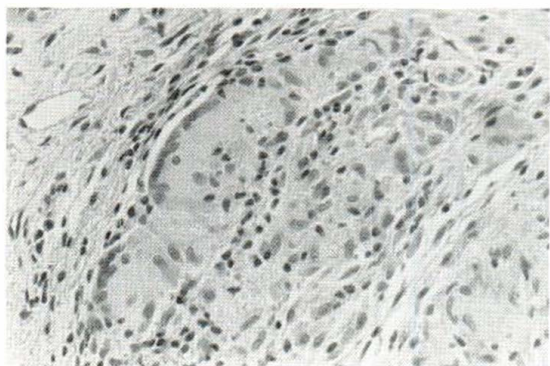


Fig. 3. Higher magnification of the epithelioid and giant cell infiltrate.

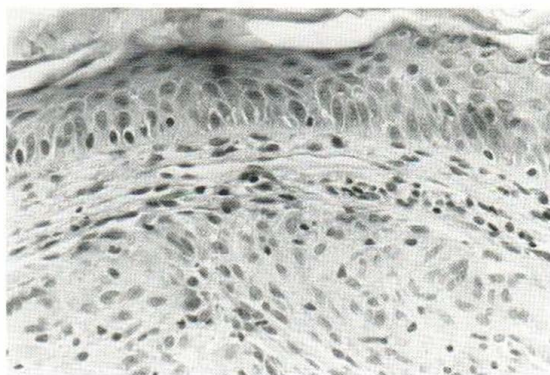


Fig. 4. Higher magnification of the upper central area of the granuloma. Note the minimal round cell reaction.

Further skin biopsies were undertaken which again showed similar findings (see Figs. 2 to 4). In about 3 months (20/12/76) there was complete flattening of all lesions into pigmented miliary atrophic macules on the chin, forehead, cheeks, paranasal and perioral regions. The pigmented macules later began to fade into small, pitted scars. One or two milia were noticed on the forehead and below the left eye. In April 1977, patch tests (28 in all) were performed using the ingredients of bubble gum, viz. flavouring, gum base (natural latex), essential oils (5% concentration) and bubble gum itself. The result was an erythematous reaction to the essential oils and to bubble gum moistened with the patient's saliva. The reaction was present at 48 and 96 hours but faded by 144 hours.

DISCUSSION

The case described presents the features of a diffuse eruption of the face sharply demarcated on the forehead and temples by the boy's rather long hair



Fig. 5. Masson stain. Periadnexal location and milium formation.

style. The eruption progressed through various stages from an initial diffuse erythema with slight vesiculation to an erythematous and later pigmented papular phase, thence to the development of numerous milia and a delling of the papules which eventually evolved into comedones. Ultimately the papules flattened and miliary pigmented macules with some atrophy appeared. In the final stage only non-pigmented pitted scars remained. The whole process took 12 months. At no stage did the eruption involve the hair-covered area of the forehead or any area of the cutaneous surface elsewhere than on the face. The visible mucosae and nails remained normal. There were never any systemic changes noted, either clinically or on investigation.

This patient's complaint conforms both from the clinical and the histological point of view to the juvenile form of perioral dermatitis as described by Gianotti (2, 3). He described 9 cases in children, affecting both sexes, of a facial eruption consisting of erythematous, yellowish, hemispherical, shiny micropapules beginning with a slight vesicular element at the onset of the disease. The eruption then progressed through various stages, showing pigmented papules, slight scaling, milia and finally atrophic pitted scars. On diascopy the papules displayed a lupoid appearance. The condition worsened and improved in turn over several years. Histologically there was a granulomatous infiltrate with "sarcoid-like" appearance in some cases. No mention was made by Gianotti of any attempt to elucidate the etiology.

In the present case the localization of the central portion of the face and the area of the forehead not protected by the hair, strongly suggested an external contactant. Several factors were implicated in the etiology: Fluorinated steroid, fluorinated toothpaste, mercury, and bubble gum. The fluorinated steroid given at the onset of the disease may have precipitated the problem. However, the steroid was used for a distinct and short time only and did not seem to alter the course of the disease and of course does not explain the eruption present prior to the use of fluorinated steroid. However, one cannot absolutely deny the possible influence of the steroid in the transformation from an eczematous dermatitis to a sarcoidal granuloma. The inadvertent use of fluorinated toothpaste had no effect on the progress of the disease. Mercury was considered because the child showed a positive patch test to

mercury. The patient's contact with mercury had occurred during school science experiments with a mercurial compound several months previously. However, no mercury-containing compounds or preservatives could be revealed in the child's environment. A bubble gum etiology is postulated in this case. The child admitted to being an avid bubble gum fan, blowing bubbles which burst over the fact. The sharp demarcation by the forehead hair supported this proposition. Bubble gum consists of flavouring, natural latex and essential oils. Fisher (3) described an irritant contact dermatitis due to essential oils contained in the bubble gum, though he made no comment on the histology. Sleigleder (11) considered that perioral dermatitis may be caused by some agent specifically absorbed by the follicle. It is possible that certain of the ingredients of bubble gum, e.g. essential oils, may be absorbed by the follicle and hence produce a perifollicular reaction of a granulomatous nature. Burks (11) observed a case of a granulomatous lesions on the eyelids with a sarcoid-like histology which was attributed to cosmetic preparation applied to the eyelids. Marks & Black (8) considered that perioral dermatitis was a type of follicular eczema, although clinically there was no evidence of vesiculation. In the case presented here there was a diffuse erythema with a vesicular element at the very onset of the disease. There is of course ample evidence of granuloma caused by external contactants, the best studied being that of the zirconium granuloma of Shelley & Huxley (10).

Other diagnostic possibilities were acne vulgaris, sarcoidosis, lupus miliaris disseminatus faciei, rosacea and papular granuloma annulare. However, the age at onset, the localization on the exposed part of the face, the lack of involvement elsewhere on the mucocutaneous surface or systemically and the distinct clinical pattern of the condition together with the histology served to exclude these diagnoses. The real test would have been a re-exposure to the bubble gum after the complete healing of the dermatosis. However, due to the long duration of the condition, even after the elimination of further contact with the bubble gum, this re-exposure was considered to be unethical.

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