Acta Dermatovener (Stockholm) 50: 134–136, 1970

DISSEMINATED GRANULOMA PYOGENICUM

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Abstract. An 11-year-old girl with about a dozen granuloma pyogenicum disseminated over the back and chest is described. Tissue culture of the granulomas showed good growths of fibroblast-like cells, but investigations for occurrence of virus were negative.

Granuloma pyogenicum or teleangiectaticum is a benign, vascular tumor usually about 0.5 to 1 cm in diameter. It develops in a matter of weeks often at a site of a recent injury and almost always as a solitary lesion surrounded by uninvolved skin. Histologically it is made up of enlarged, newly-formed, blood vessels embedded in an edematous stroma. The treatment of choice is excision or electrodesiccation. Földvari described a case of multiple granulomas in the nuchal and scalp region following a blow on the neck and Frain-Bell described a case with spontaneously appearing lesions on the nose (1, 2). Eighteen cases of multiple, small, satellite lesions appearing within a few weeks of removal of the primary lesion and located in a 4 to 6 cm area around its site have been described in the literature (6). These lesions have the same pathology as the primary lesion and are best removed by an electrosurgical method.

This paper is a report of a case of disseminated granuloma pyogenicum of various sizes located on the chest, neck and shoulders.

CASE REPORT

An 11-year-old girl with about a dozen, bright-red to brownish-red nodules located over the neck, scapular area, sides of the back, and breast (Fig. 1). Some were pedunculated and mushroom-shaped with a raspberry-like surface. Others were raised papules with a more smooth surface. All of them had appeared within a few weeks about six months earlier. There was no history of previous injury. After four months her local doctor had removed a larger growth on the shoulder by electrosurgery. It had now healed with a 1.5 cm diameter depigmented area. The patient's main complaint was that the lesions bled easily. A clinical diagnosis of pyogenic granuloma was made. Some of the tumors which bled easily were electrocauterized, and one bean-sized tumor was removed for histology.

The histological examination showed a mushroom-like structure protruding from the skin surface with an edematous stroma containing numerous capillaries and closely-packed endothelial cells. A few endothelial mitoses were noted, but no atypical cells or proliferation of fibroblasts. There was a moderate number of granulocytes and lymphocytes in the stroma. The epidermis was thin, atrophic and partly ulcerated. The histological findings confirmed the clinical diagnosis of granuloma pyogenicum.

When the patient was seen three weeks later the remaining granulomas had increased in size and a few new lesions had appeared. A small four- to six-day-old, bright-red tumor was removed for histology. It showed the same typical picture of pyogenic granuloma as before (Fig. 2).

The patient was seen again after another month. The remaining granulomas had further increased in size, but there were no new lesions. They were all removed for tissue culture. Three months later the lesions had healed without any recurrence.

Laboratory studies. Complete blood count, urine analysis and liver function tests were normal; ESR 2 mm. Tests for blood in feces were negative.

Tissue culture of granuloma and investigation for occurrence of virus. The biopsies were placed in culture using the "grid-technique" of Jenssen et al. (4). After about four weeks a good growth of fibroblast-like cells was obtained. No cytopathic effects were noted within an observation period of four months.

Fluids from the original grid and derived monolayer cultures were repeatedly harvested and added to human fetal lung fibroblasts in serial culture of secondary human kidney cells. No effect on the cells was noted even after staining (May-Grünewald-Giemsa).

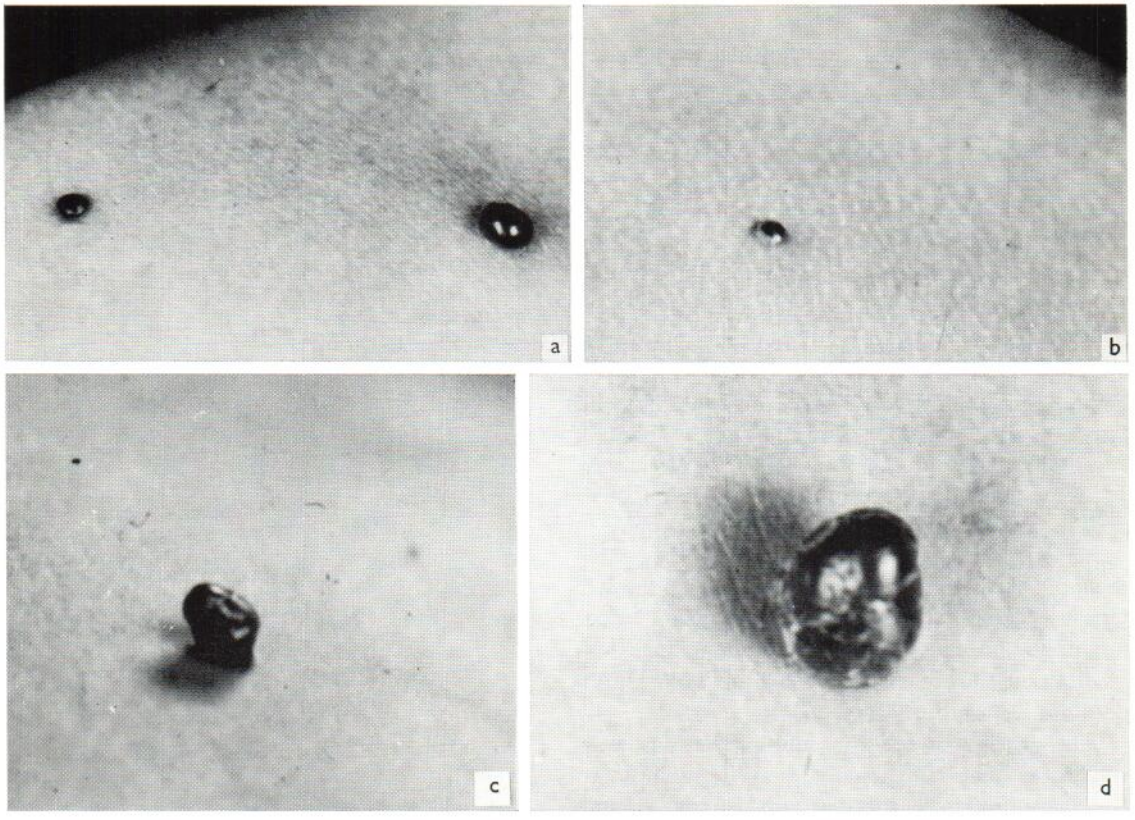

Fig. 1. Pyogenic granulomas appearing simultaneously on left shoulder (*a*), right shoulder (*b*), right side of back (*c*) and of chest (*d*).

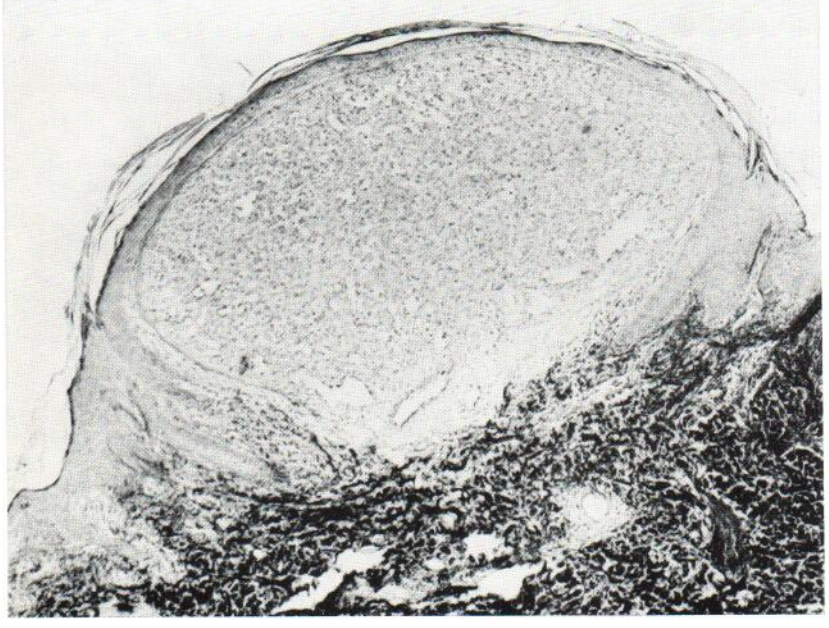

Fig. 2. Typical histological picture of granuloma pyogenicum. The raised lesion is a compound of numerous capillaries and solid strands of endothelium and fibroblasts covered by a thin epidermis which becomes hyperplastic around the base to form a characteristic "collarette". Only a few lymphocytes were seen in this non-ulcerated lesion. Van Gieson, × 45.

DISCUSSION

Our case seems unique in showing granulomas appearing in different areas of the skin within a rather short time.

The eighteen patients described in the literature with satellite recurrences after removal of a pyogenic granuloma have, like our patient, all been children between eight and seventeen years. In most of the published cases the satellite granulomas were also located over the shoulder region where our patient had one of her largest growths removed. However, the usual site of a single pyogenic granuloma is on the face or hands and in only one of the 108 cases reported by Freund was it located over the shoulders (3). Warner & Jones assumed that pressure during sleep could be the reason why multiple granulomas mostly occur on the scapula. Sims et al. (5) discussed the possibility that local pressure from adhesive tape used after the removal of the primary lesion might be the cause. Since the tumors appeared at different sites in our case, such an explanation does not seem probable.

The distribution of the multiple lesions was similar to that occasionally seen in molluscum contagiosum. Tissue cultures and histology of the lesions, however, showed no evidence of any inclusion bodies or other evidence of virus infection.

An inoculation of granuloma cells via small arteries while removing or scratching the lesions is another possibility. The cells could thus cause small cutaneous emboli in the skin which could offer an explanation as to why they appear around the primary lesion. In our case, with more widespread lesions, a local spreading via arteries of lymphatics around both shoulders to the chest region is more difficult to explain. If the multiple granulomas are spread via the blood vessels, the possibility of their occurrence in the internal organs is also possible, but no sign of bleeding in the intestinal or urinary tracts was found.

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Received May 22, 1969

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