A Case of Intravenous Pyogenic Granuloma of the Palm

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Intravenous pyogenic granuloma (IVPG) is a form of pyogenic granuloma (PG) in which the capillary proliferation is confined entirely within the lumen of a vein. It occurs typically in the neck and upper extremities. Histologically, this benign lesion is similar to PG of other localizations and is characterized by a lobular proliferation of capillaries growing in a sparsely cellular, edematous collagenous stroma. We report a case of IVPG developing in the palm, an unusual site of occurrence. (Ann Dermatol 12(3) 222~224, 2000).

Key Words : Intravenous pyogenic granuloma

Pyogenic granuloma (PG) is a common proliferative vascular lesion that represents a polypoid form of capillary hemangioma. It is usually found in the hand, fingers, and face as a small, pedunculated, red or bluish nodule that is prone to ulceration or bleeding[1]. Microscopically, it is characterized by a proliferation of tufted capillaries set in a poorly cellular fibromyxoid stroma containing scattered inflammatory cells[2]. Cooper et al[3] described a previously unrecognized form of PG that is found entirely within the lumen of a dilated vein. Intravenous pyogenic granuloma (IVPG) mostly occurs in the neck and upper extremities. In Korean dermatologic literature, 2 cases of IVPG have been reported[4,5]. We report here on a case of IVPG which developed in the right hypothenar area.

CASE REPORT

A 36-year-old male patient visited our clinic because of a nonpainful, pea-sized bright red nodule on the right palm. It was noticed initially 2-months before. There was no history of trauma to the hand, and the patient had not noted any significant increase in the size of the nodule.

A physical examination of the right palm revealed a bluish 7×11 mm-sized subcutaneous nodule located in the midportion of the hypothenar area (Fig. 1).

Excision biopsy revealed a pink, oval, cyst-like nodule within the vein of the subcutaneous tissue of the mid-portion of right hypothenar area.

Histologically, the lesion consisted of an intravascular nodule attached to the luminal surface of the vein wall (Fig. 2). At higher magnification, the nodule was seen to consist of a lobular proliferation of capillaries and there were large areas of a poorly cellular stroma. The capillaries were small and lined by prominent endothelial cells which were approximately equally distributed throughout the tumor (Fig. 3). The stroma had a myxoid quality and contained elongated spindle cells, and widely dilated blood-filled vascular channels were surrounded by small proliferating capillary buds (Fig. 4). Verhoeff-van Gieson stain showed no elastic fibers within the lobules of the capillaries. Masson's trichrome stain showed that smooth muscles of the venous wall are carried to the lobule of capillary proliferations (Fig. 5).

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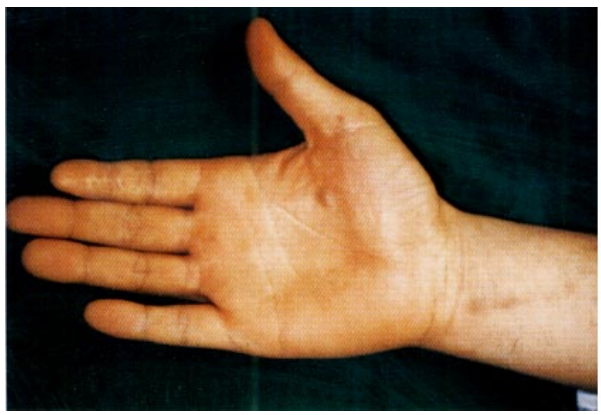

Fig. 1. Bluish 7×11 mm-sized subcutaneous nodule on right hypothenar area.

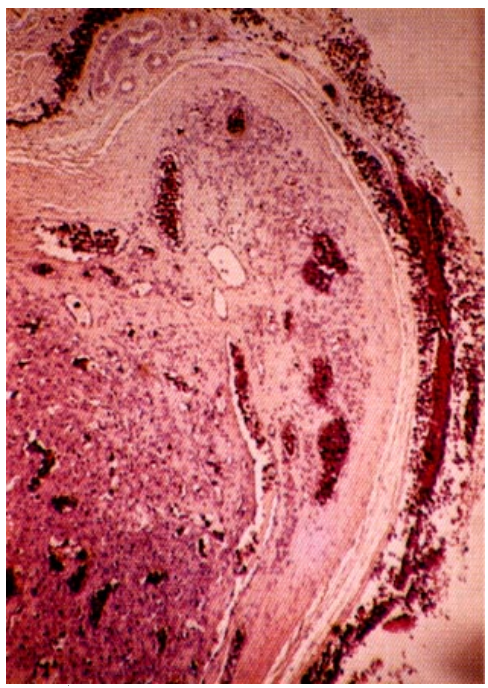

Fig. 3. The nodule was composed of lobules of capillies (H & E stain, ×40).

DISCUSSION

Pyogenic granuloma (PG) is a common, acquired nonmalignant vascular tumor[6]. It is a vascular nodule that develops rapidly, often at the site of a recent injury or infection of the skin and oral and genital mucosa. It is usually found in the head and neck region as a small, pedunculated, red or bluish nodule that is prone to ulceration or bleeding[1]. It was originally thought to be a reactive process to trauma or pyogenic infections but is

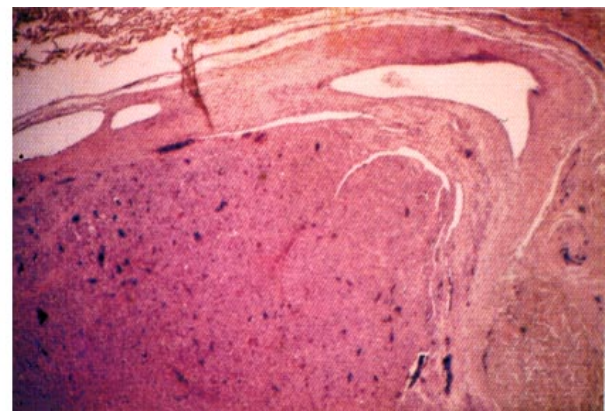

Fig. 2. Intravascular nodule attached to the luminal surface of the vein wall (H & E stain, ×20).

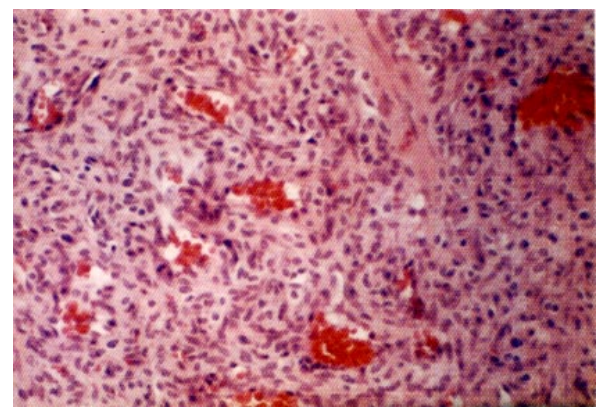

Fig. 4. Dilated blood-filled vascular channels were surrounded by small proliferating capillary buds (H & E stain, ×200).

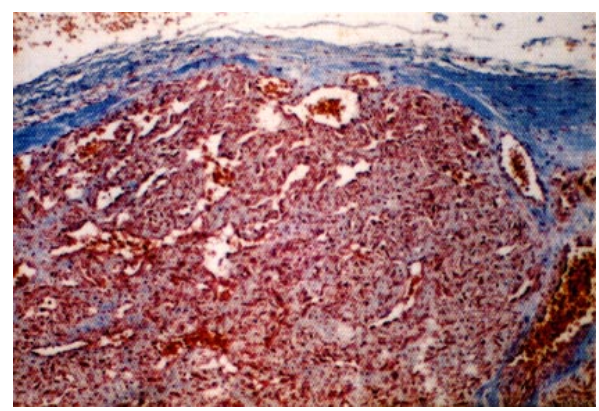

Fig. 5. Smooth muscles of the venous wall were carried to the lobule of capillary proliferations (Masson's trichrome stain, ×100).

now felt by many to be a lobular capillary hemangioma[2,7,8]. The lesion is characterized histologically by a proliferation of capillaries set in a poorly cellular fibromyxoid stroma containing numerous inflammatory cells.

PG has been classified into 3 types according to location: classic PG occurs in the dermis, subcutaneous PG in the subcutaneous tissue, and intravenous PG (IVPG) within a dilated vein[7,8].

IVPG is a rare, benign, intravascular tumor, which has been identified in veins of the neck and upper extremities[3]. IVPG rarely occurs in the palm. Only 2 cases occurring in the palm have been reported in English-written literature[9,10]. The pathogenesis of IVPG is not known. Like other PG, it is benign and manifests no tendency to spread through the bloodstream.

Histologically IVPG consists of intraluminal nodules attached to the wall of a vein by a fibrovascular stalk. The most prominent component is a lobular proliferation of capillaries lined by flattened or rounded endothelial cells. They are supported by sparse spindle cells in a fine collagenous myxoid stroma. Mitotic activity varies and can be prominent. Our case exhibited typical clinical and histological features, and was diagnosed as IVPG.

IVPG should be histologically differentiated from intravascular papillary endothelial hyperplasia (IPEH), inflammatory angiomatous nodules, Kaposi's sarcoma, and angiosarcomas. IPEH is characterized by its complex papillary structures[9], frequent association with organizing thrombi, and hemosiderin pigment deposits[11]. An inflammatory angiomatous nodule differs from IVPG in its greater cellularity, atypical proliferation of endothelial cells, and profuse inflammatory component consisting of lymphoreticular cells and variable numbers of eosinophils[10]. Kaposi's sarcoma is manifest predominantly as a relatively well-circumscribed dermal mass of variably eosinophilic spindle cells. Scattered between these cells are profuse irregular, slit-like, vascular spaces, but not blood vessels with identifiable endothelium[7]. Angiosarcomas are poorly organized, diffuse, and infiltrative lesions that do not show a distinctive lobular pattern. They typically exhibit nuclear pleomorphism, hyperchromatism, and numerous mitoses[6,7].

As a rare benign intravascular tumor, the authors report a case of IVPG occurring on the right palm.

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