

# Gingival Hyperplasia by Nifedipine

## Report of a Case

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Bencini PL., Crosti C., Sala F., Montagnino G., Tarantino A., Menni S., Piccinno R. Gingival hyperplasia by nifedipine. Report of a case. *Acta Derm Venereol* (Stockh) 1985; 65: 362-365.

We describe a case of gingival hyperplasia in a 36-year-old renal transplantation recipient treated with nifedipine for severe arterial hypertension. The appearance of the gingival disorder was probably related to nifedipine intake. Histologically, in addition to the findings of acanthosis, papillomatosis and connective tissue hyperplasia, there was also an important plasma cell inflammatory infiltrate. *Key words: Ca antagonists; Drug-induced side effects.* (Received November 6, 1984.)

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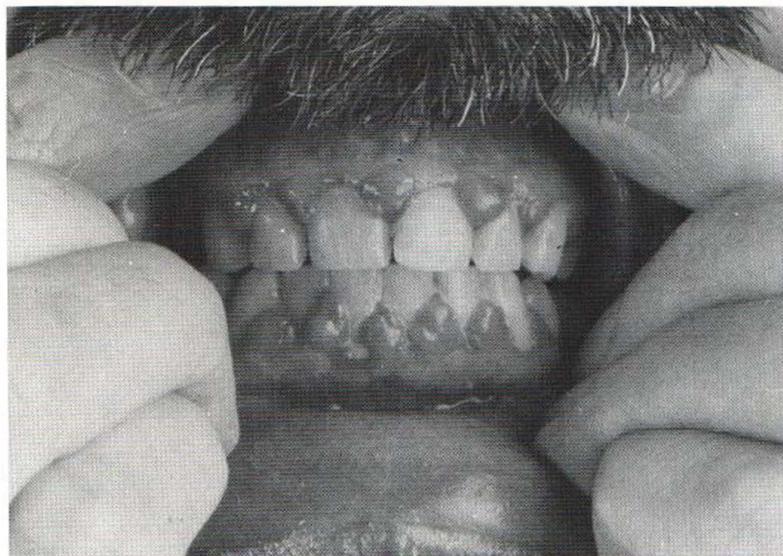


Fig. 1. Clinical features.

Several drugs may be responsible for hyperplastic modifications of the gingival tissue. In addition to diphenylhydantoin (1), sodium valporate, an anti-epileptic agent (3), and cyclosporin A, a powerful immunosuppressive agent (4), have been recognized as possible causes of gingival hyperplasia. More recently cases of gingival hyperplasia have been described in patients treated with nifedipine (Adalat® Bayer) (2).

The pathogenetic mechanisms of all these conditions are unknown. However, they exhibit surprisingly similar clinical and histological features, in spite of the different chemical structures, modes of action and indications of the involved drugs.

The common histopathologic finding is an important epithelial hyperplasia, associated to the presence of numerous fibroblasts within the connective tissue. Generally, there is also a quite variable infiltrate, but, in the case of cyclosporin A hyperplasia, it is constantly made up of many plasma cells (4).

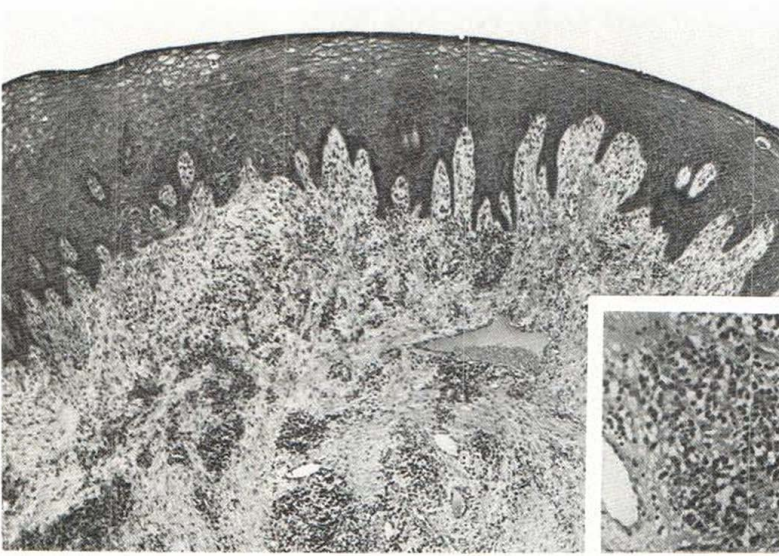
In this paper we report the clinical and histological features of a case of nifedipine induced gingival hyperplasia, occurring in a patient with renal transplantation who suffered from severe arterial hypertension.

#### CASE REPORT

Our patient was a 36-year-old male, who underwent kidney transplantation at the age of 33, after a hemodialysis period of 22 months. Uremia was caused by glomerular nephropathy of unspecified origin.

The maintenance immunosuppressive treatment schedule called for azathioprine (100 mg/day) and steroids (methylprednisolone, 16 mg every other day). After transplantation, the patient developed severe arterial hypertension, in spite of the simultaneous administration of clonidine, betablockers and furosemide. Because of the persistence of hypertension, during the third month after kidney transplantation the above anti-hypertensive treatment was replaced by nifedipine (Adalat® Bayer 80 mg/day) combined with furosemide (Lasix® Hoechst 50 mg/day). This combination gave good results. Seven months after the beginning of nifedipine administration, a gingival hyperplasia originating from the anterior interdental papillae became evident, and continued to increase during the following months.

When the patient was referred to us, his gingivae appeared increased in size especially in the anterior portion, where the marked hyperplasia caused the formation of large pseudosacs, containing



*Fig. 2.* Histopathological findings ( $\times 25$ , insert:  $\times 105$ ).

some purulent secretion. The lesions involved also the palatal and lingual portions of gingivae. They were lobulated, bright red, of increased consistency (Fig. 1). They did not bleed. Spontaneous pain or pain upon pressure was absent. Oral hygiene measures were recommended, including periodical dental tartar removing, antiseptic washings and gingival massage. Within a few months, the infectious phenomena and gingival hyperemia gradually disappeared, but the volume of the gingivae was only negligibly reduced.

#### *Histological examination*

Histological examination revealed epithelial hyperplasia with acanthosis, papillomatosis, and hyperplasia of connective tissue with a moderate increase of fibroblasts. The vessels were dilated, with turgid endothelia. A lymphohistiocyte infiltrate with numerous plasma cells, mainly arranged perivascularly, was observed (Fig. 2).

## DISCUSSION

Gingival hyperplasia is frequently found in kidney-transplanted patients treated with cyclosporin A, while no cases have been reported in patients given conventional immunosuppression with steroid and azathioprine. The gingival modifications observed in our patient were related to the administration of nifedipine. Ramon in 1984 (2) described five patients who developed gingival hyperplasia after nifedipine consumption, which was characterized by a marked epithelial hyperplasia and acanthosis, with moderate inflammatory reaction in the lamina propria.

The histological picture observed by us was somewhat different, since the inflammatory infiltrate was more abundant and quite rich in plasma cells. Such features are more frequent in cyclosporin A-induced gingival hyperplasia (4). This similarity might be explained by the pharmacological immunosuppression which also characterized our patient. This might have enhanced the aggressiveness of the bacterial flora of the oral cavity, thus making the hyperplastic gingival tissue more susceptible to local inflammatory or irritative noxae. Careful oral hygiene indeed led to a certain improvement of the condition, but did not cause the disappearance of the disorder. The plasma cell rich infiltrate might therefore be secondary. The evolution of gingival hyperplasia is probably related only to

drug administration, while it is only negligibly affected by oral hygiene measures and may recur after gingivectomy (2). In our opinion, however, the true etiopathogenetic mechanism of the drug still has to be clarified. Clinical and statistical studies on large groups of patients will be needed to demonstrate the actual incidence of these complications.

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