

Rhinopathia medicamentosa

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The misuse of nose drops is a problem that exists as long as there are nose drops. For instance, patients with a common cold sometimes may continue to use nose drops for a much longer time than about one week. Since they cannot breathe easily through the nose, they will continue to use nose drops, which will give them relief for a short time only. Some hours later the nose is blocked again and the patient will use his drops again. The patient gets into a vicious circle and will use the drops several times a day, sometimes even for many years. They get used to the nose drops and what exactly happens with the nasal mucous membranes of these patients is not known. 20 patients were examined who misused nose drops for more than 6 months, at least once a day, and we studied the following aspects:

- I. Nasal conductivity;
- II. Lightmicroscopic appearance of the nasal mucosa;
- III. Electron-microscopic (transmission and scanning) appearance of the nasal mucosa.

Ad 1. NASAL CONDUCTIVITY

With the active posterior rhinomanometric method as designed by Spoor (1965), the nasal conductivity was tested in 20 patients who misused nose drops. The patients were asked to discontinue the use of nose drops the evening before the experiments in order to prevent any influence of the nose drops on the experiments. Conductivity tests were done for at least four hours under identical climatic conditions, in order to eliminate a possible influence of the nasal cycle on the conductivity. In none of these patients, however, a nasal cycle was found. The patients were explained that their nasal complaints were induced by the prolonged use of nose drops and they were strongly advised to give up this misuse. To ease their nasal symptoms, the patients were treated during two weeks with 2 mg dextrochlorofeniramine-maleate and 0.25 mg dexamethasone, three times a day orally in one tablet and 50µg beclomethasone dipropionate applied in the nose three times a day.

After four weeks all patients were examined again and none of them had any nasal problems. Four to six months after the use of nose drops had been given up, the conductivity was tested again under identical circumstances. The patients were still free of nasal problems and the conductivity improved in all cases. A normal nasal cycle, however, could not be found in this group.

Ad II. LIGHTMICROSCOPY

In order to get further information about the anatomical changes in the nasal mucous membranes of patients who misused nose drops, a biopsy was taken from the middle part of the inferior turbinate. The tissues were studied after H. E. staining. Alcian Blue staining was used to stain the mucus from the goblet cells and the submucosal glands.

Compared with biopsies from normal mucous membranes, a decrease of the number of cilia and a change from cylindric epithelial cells into cubic cells were found (metaplasia). The basement membrane was intact in all cases. The submucosa was slightly to moderately infected, whereas the number of goblet cells appeared to be increased.

Ad III. ELECTRON-MICROSCOPY (TRANSMISSION AND SCANNING)

The lightmicroscopic results on destruction of the cilia and metaplasia of the epithelium induced us to examine this in detail by means of an electron microscope, in order to acquire more details about the ultra-structural changes in the cells of the mucous membranes.

Scanning E.M.:

The lightmicroscope findings were confirmed by this technique. A finding with the scanning E.M., which we hadn't done with the lightmicroscope, was the impression that there seemed to exist less co-ordination between the cilia of the cells of the mucous membranes of patients who had misused nose drops.

Transmission E.M.:

This technique showed the ultrastructure of the cilia, which was intact (9 + 2 pattern). Also, the deneine-arms and central spokes were present, as opposed to Herzon's findings (1981). The mucous membrane of misusers of nose drops had changed with metaplasia from cylindric cells into cubic ones. Besides, many vacuoles were to be seen in these cells.

CONCLUSIONS

Our findings in a group of 20 patients who had misused nose drops for more than 6 months can be summarized as follows:

1. The nasal conductivity, tested with the active posterior rhinomanometric method on patients during their nose drop misuse and 4 to 6 months after they discontinued using them increased in 75 percent of the patients.
2. No nasal cycle was to be found in patients who misused nose drops. Six months after the discontinuance of the nose drops a return of the nasal cycle could not be found.
3. The quantity and quality of cilia of the cells of the mucous membranes of

patients who misuse nose drops is decreased. This can be shown by means of a lightmicroscope and a scanning-electron microscope.

4. A metaplasia of the mucous membranes of patients who misuse nose drops is evident. The cylindric cells have been replaced by cubic ones.
5. The ultrastructure of the remaining cilia of cells of mucous membranes from patients who have misused nose drops, is not disturbed.

REFERENCES

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