

Possible similar hormone answers in vaginal and oral hollow cytology

C. HULPE - G. L. ONNIS - V. TERRIBILE WIEL MARIN

Summary: The Authors have reviewed the literature and examined some groups of patients in order to evaluate an eventual similarity in the hormonal response, from a cytological point of view, between vaginal and oral hollow cases.

Key words: vaginal cytology; oral cytology; hormone response.

INTRODUCTION

Oral cavity cytology may be compared to vaginal smearing, being similar in many ways, although precise distinctions exist concerning the definition of the cellular lesions. Both the oral and vaginal cavities are made up of a pavementing multistratified epithelium which seems to function in the same way when enhanced by the same stimuli.

Oral cavity cytology is not to be considered only as an academic achievement but has proved useful in the early diagnosis of neoplastic lesions^(9, 14) and hormonal investigations, according to other Authors.

The first publications in the field date back to 1843, thanks to Walsh, Beattie in 1860, Lambert in 1851, and so on up to 1954 when Papanicolau published the first atlas of exfoliative cytology with interesting notes on oral cytology. It is well-known and has been widely proved and accepted that the vaginal epithelium

has a cyclic response which is significantly related to a woman's hormonal condition.

Some Authors have carried out studies aimed at evaluating the real link between vaginal mucous response and oral mucous response to the same hormonal stimulus. Some of these have noticed that during women's monthly hormonal cycle, the pavementing of the epithelium of the oral cavity showed changes of the karyopyknotic and eosinophil indices similar to those of the vaginal epithelium^(4, 7, 8, 11, 13, 17).

On the contrary, while no Author has reported any cyclic correlation, and others (W. R. Brandenburg, E. Guiard) have so far detected only rhythmical alterations quite similar to those of the vagina, in fact these researchers did not encounter in this epithelium the characteristic folds and the typical tendency to form masses, strictly related to hormonal stimulation. For this reason they believe that oral mucus smears are not significant in the evaluation of the hormonal state of the patient^(1, 5).

Some feel that the oral mucus responds to oestrogenic stimulus, and in fact during menopause, the oral mucus has a similar atrophic aspect with the thinning of the mucous membrane which appears skinnier

Institute of Pathological Anatomy
of Padua University, Chair of "Institutions
of Pathological Anatomy and Histology"
(Director: Prof. V. Terribile Wiel Marin)

and more fragile, as in the case of the vaginal mucus. The epithelium shows a lack of maturation with consequent drying of the membrane, which is pale in appearance; the cells obtained are mostly intermediate, mixed with those of the basal layer.

The cytological picture is characterized by a generally greater degree of cellular atrophy according to the residual ovarian function⁽¹⁵⁾. Recently a study has been carried out on a limited number of patients in menopause, who had complained of dryness and burning in the oral cavity, strictly related to the problem of atrophy. These patients were treated with oestrogen per vagina for three months, and after the treatment, the underlying symptoms were reduced⁽¹²⁾.

The finding of atrophic smears with prevalence of basal and parabasal cells is extremely rare. Such a picture is seen only in the case of severe stomatitis⁽²⁾. Rather, cytological pictures comprising a mixture of parabasal and superficial cells can be observed although the smear done on the same woman shows complete atrophy. Nevertheless, if a treatment with oestrogens is established a remarkable increase of intermediate and superficial cells is noted^(10, 15, 17, 18).

MATERIALS AND METHODS

We carried out this study thanks to collaboration between the Institute of Pathology and the Odontology Department of the University of Padua.

Two distinct groups of woman were chosen: the first group consisting of those pregnant, and the second not, but both groups free from any disease of the oral and/or vaginal cavity, with regular menstrual cycles and who had not taken hormones during the preceding six months.

Both the vaginal specimens and those of the oral cavity were obtained by use of the Aire spatula; the tissue thus obtained was immediately smeared onto the specimen glass holder and fixed with Cytofix spray; we used the Papanicolaou dying for this investigation. The vestibular mucus was chosen as the site for obtaining the specimen, since in our judgement it appears to be

less disposed to infection, and the cells, especially those of the palate, undergo less distortion due to chewing. The vaginal specimens were taken from the wall; four specimens were taken from non-pregnant women during one menstrual cycle, on set days, namely for vaginal and oral. Both the smears were examined at the same time, in order to evaluate any possible correlation in terms of hormonal findings.

RESULTS

Eighty non-pregnant patients aged between 20 and 40 years were examined; five of them were obliged to discontinue supplying specimens on account of vaginal infection which occurred during that period, thus not allowing for an accurate evaluation of the sample. Our findings show a correlation between ICP and ICP Va, and in 58 of these cases the hormonal ratio was practically identical. In the remaining 17 a contrast between the evaluation of hormone levels in both vaginal and oral specimens was detected.

In 8 cases, after an initial phase of agreement, a net contrast between the two values was observed. On the other hand, in 9 cases there was no correlation in any sample we studied. In addition, oral smears were taken from 40 pregnant women, at various stages of pregnancy, all being disease-free, with the aim of proving whether a real correlation between oral mucus and hormone level in pregnancy exists.

Clinically speaking, a reasonable hypertrophy of the gum was present in 25 of these cases; as reported by Emmerch Von Haam M.D. who is convinced, on the basis of his case studies, that during pregnancy the oral cavity cells become superficial and extremely acidophylic in nature, due to the marked increase of oestrogen production. Also in these patients both a vaginal and an oral specimen was taken. As in almost all our cases, we noticed that in 34 out of 40 there was no significant correlation of the karyopyk-

notic indice, while a noticeable increase of specific and aspecific bacteria was found.

DISCUSSION

According to the knowledge obtained from literature, there would appear to be a discrepancy concerning oestrogenic action on the mucus of the oral cavity, although a correlation between free oestrogen levels in saliva and in blood in menopausal women has already been demonstrated⁽¹⁹⁾.

Likewise, it has been proved that a considerable number (30%) of women in menopause have diseases of the oral mucus; however, no lesions were present in those women undergoing menopause, who did not report any obvious symptoms of menopause⁽²⁰⁾.

The oestro-progesterone treatment usually relieves the symptoms⁽¹²⁾. A recent study has been carried out on 22 women ranging between the ages of 52 and 57 years respectively, in menopause and having problems of dryness and burning in the oral cavity, definitely connected with problems associated with atrophy. These patients were treated with oestrogens vaginally (Colpogyn 0.5 mg/die for 4 weeks and successively 0.5 mg/die twice a week for a three-month period altogether). Following this period of treatment both the subjective and objective symptoms were remarkably reduced.

In this investigation we personally attempted to prove whether hormonal response is associated with vaginal and oral mucus and we aimed at possibly evaluating this stimulus, exclusively at oral level. We encountered good correlation as concerning the specimens taken monthly in 58 patients out of 80, while no specific link was observed in 22 patients.

In the 22 cases having no correlation whatsoever, we detected no specific reason which would account for the con-

trast in terms of data. Hence, it is worthwhile mentioning that 60% of these patients had reported problems related to underlying oral pathology within the previous 12 months, ranging from straightforward stomatitis, apex granulomas to hypertrophy of the gums.

As regards the pregnant patients, no link between ICP Va. and ICP and/or any eventual presence of hypertrophy of the gums was detected.

According to data obtained from our study it would appear that there is a specific link between the vaginal and oral hormonal pictures, although we were unable to discover which mechanisms regulated the presence or absence of oral mucous response to hormonal stimulus which is, nevertheless, observed in the vagina, nor why these phenomena may change suddenly.

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Address reprint requests to:

Dr. G. L. ONNIS
Via Cesare Battisti, 16
35128 Padova