THE ORAL MUCOSA AND THE PREGNANT WOMAN

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SYNOPSIS

The gingivae and the oral hygiene of sixty pregnant patients were examined. It was found that many patients had gingivitis of variable intensities. An increased amount of dental plaque was responsible for an increased degree of gingivitis. Patients who had no plaque were free from gingivitis. Pregnancy epulides developed in susceptible patients in the presence of mechanical irritation. Treatment include good oral-hygiene, elimination of irritants and excision of epulides if troublesome.

INTRODUCTION

The oral mucosa is sensitive to many systemic changes within the body — be it metabolic, hormonal or chemical. During pregnancy, it is known that there are changes in the levels of certain hormones, like progesterone and oestrogen. These changes have a profound effect on the oral mucosa in susceptible patients. Gingivitis, in variable degrees of severity are frequently seen in such patients. The disease may be diffuse and generalised or it may be localised to certain regions of the gingivae only. Not uncommonly, gingivitis is not the only presentation of the gingival reaction to pregnancy, as a large tumour-like mass of variable size, termed the pregnancy epulis (Pregnancy tumour) may be encountered. It has often been stated that pregnancy gingivitis and epulides can be avoided or kept to a minimal level in the absence of oral sepsis and mechanical irritation. This paper presents the findings of an investigation into the occurence of pregnancy gingivitis and its relationship with oral sepsis and mechanical irritation in pregnant Malaysian women.

MATERIALS AND METHODS

The gingival health of sixty pregnant patients between the ages of 18 and 33 years were examined at the Faculty of Dentistry, University of Malaya.

The severity of gingivitis were grouped as follows:-

No pathosis
Mild gingivitis
Moderate gingivitis
Severe gingivitis
Pregnancy epulis

The oral hygiene status of each patient was determined using the modified version of Loe's dental plaque Index which is as follows:-

Grading	Amount of Dental Plaque
0	No dental plaque
1	Film of plaque visible only with use of disclosing solution
2	Moderate amount of plaque
3	Heavy accumulation of plaque

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During the first appointment, the severity of gingivitis, the amount of dental plaque and the presence of mechanical trauma in each patient were determined. The mean plaque score in each category of the disease was then evaluated (Table 1). Each patient was subsequently instructed in effective oral hygiene techniques, and the progress of the disease six weeks later were recorded (Table II). Any traumatising factors associated with the gingivitis was eliminated.

After parturition, only 51 out of 60 patients were available for recall. Their gingival states were re-assesed (Table III).

RESULTS

Patients who had no pathosis and mild gingivitis did not have any mechanical irritation factors in their mouths. Between 60-80% of patients with moderate and severe gingivitis had variable amounts of dental calculus and improperly-inserted dental restorations which acted as mechanical irritants. The two patients with pregnancy epulis had an extensive carious lesion of the teeth associated with the lesion as well as gross calculus.

The degrees of gingivitis, correlated with the mean plaque score at the first appointment, six weeks later after oral hygiene instructions were given, and after parturition are presented in table I, table II and table III respectively.

DISCUSSION

Loe (1), Cohen et al (2) and Hugoson (3) found that the degree of gingivitis in pregnant women in their cases to be more marked than those in the non-pregnant ones. This is a view shared by many investigators. The aetiology of pregnancy gingivitis is the elevated level of the hormone progesterone during pregnancy. Oral sepsis in the form of dental plaque and mechanical trauma in the form of dental calculus and irritative oral appliances serve to enhance the inflammatory response of the gingiva to progesterone and thus increasing the severity of the disease. In this state, there is an increased sensitivity of the gingiva towards hyperaemia, vasodilatation and non-specific chronic inflammation. This contention is supported by this investigation. It was seen (Table I) that patients who had severe gingivitis had a very high mean plaque score of 3. For those without pathosis, mean plaque score was only 0.8. As the plaque score increased, the gingivitis became more severe.

When first seen, most patients did not realise the importance of oral hygiene. Table II shows the improvement of the disease after comprehensive oral hygiene instructions were given to the patient involved. It can be seen that the number of patients with the less degree of severity of gingivitis has increased. Initially, 26 patients (43.3%) had moderate gingivitis (Table I), but six weeks later, as a result of improved oral hygiene, only 20 (33.4%) had gingivitis of the same degree (Table II). The number of patients with mild gingivitis increased to 21 patients (Table II) from 15 patients (Table I). This is explained by the fact that many patients with initial moderate gingivitis subsequently succeeded in improving their oral hygiene, thus reducing their gingivitis states to the mild category. The association between the level of plaque and the degree of gingivitis is clearly shown in table I and table II: That the severity of gingivitis increases as the amount of dental plaque increases. After parturition, it was noted that most patients had only mild gingivitis, with only a few patients having moderate or severe gingivitis (Table III). This must have been due to the lowering of progesterone level once pregnancy ceased. Response to oral hygiene regimes was well-received by many patients who had mild and moderate gingivitis, and this explained the subsequent significant improvement in their disease. There was not much improvement in the disease in many of the patients with moderate and severe gingivitis. This was because most patients in these groups were indifferent to good oral hygiene and their oral homecare were inadequate. Furthermore it is known that it would be much more difficult to resolve the gingival tissues that has been so severely affected by inflammation back to normalcy.

The pregnancy epulis is an entity of exaggerated response of the gingiva to pregnancy in the presence of mechanical trauma and dental plaque. The former irritant plays a dominant role in the formation of the lesion. Clinically, it appears as a red, inflamed and not uncommonly ulcerated elevated lesion of variable sizes (Figure 1). It bleeds readily on probing and this is due to the rich vascularity of this lesion within the connective tissue subjacent to the covering epithe-

TABLE I

Gingivitis and Mean plaque score in 60 patients at first appointment

Degree of gingivitis	No. of patients	Percentage	Mean plaque score
No pathosis	9	15.0	0.8
Mild gingivitis	15	25.0	1.8
Moderate gingivitis	26	43.3	2.5
Severe gingivitis	8	13.4	3.0
Pregnancy epulis	2	3.3	2.1
TOTAL	60	100	—

TABLE II

Gingivitis and mean plaque score in 60 patients six weeks after oral hygiene instructions

Degree of gingivitis	No. of patients	Percentage	Mean plaque score
No pathosis	11	18.3	0.5
Mild gingivitis	21	35.0	1.5
Moderate gingivitis	20	33.4	2.3
Severe gingivitis	6	10.0	3.0
Pregnancy epulis	2	3.3	1.8
TOTAL	60	100	—

TABLE III

Gingivitis and Mean plaque score in 51 patients after parturition

Degree of gingivitis	No. of patients	Percentage	Mean plaque score
No pathosis	10	19.6	0.6
Mild gingivitis	25	49.1	1.6
Moderate gingivitis	10	19.6	2.3
Severe gingivitis	4	7.8	3.0
Pregnancy epulis	2	3.9	1.8
TOTAL	50	100	—

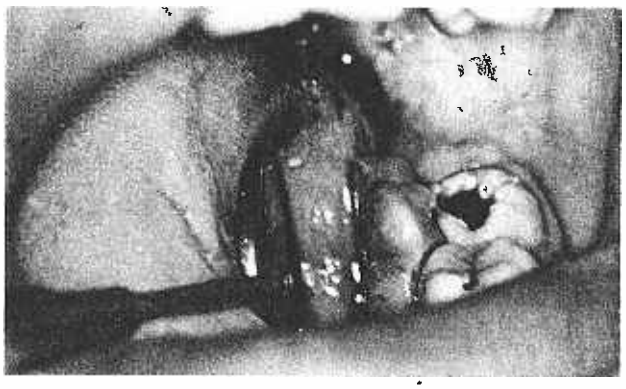

Figure 1: The large bilobed soft tissue mass of pregnancy epulis is sandwiched between the lingual surface of the mandibular molars and the lateral surface of the tongue.

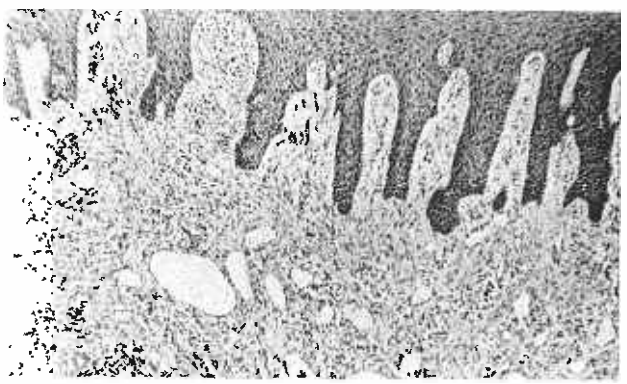

Figure 2: The pregnancy epulis consists of numerous capillaries and angioblasts beneath the oral stratified squamous epithelium. H & E X 100.

lium (Figure II). In both patients, the pregnancy epulides were intimately associated with grossly carious teeth which had rough edges. As these epulides were mobile, their movements would rub against the rough carious surfaces thereby traumatising them. The epulides in the two patients were not surgically removed, though they caused slight discomfort to the patients because both patients were already in their eight month of pregnancy. It was decided that it was best to wait after parturition. The lesions did not completely regress though there were significant amount of demunition after parturition. They were subsequently excised and there was no recurrence.

The works of Plass et al (4), Hesseltine (5) and Mizuno (6) demonstrated that vaginal thrush were rampant in pregnant women. Bland et al (7) stated that the pregnant women were more likely to be affected by vaginal thrush than the non-pregnant women when inoculated with candida. The relationship between pregnancy and oral thrush on the other hand is not known. Gardner (8) was in the opinion that oral thrush does not occur because certain changes which takes place in the vagina during pregnancy, like the increase in glycogen content, its conversion to lactic acid which subsequently favours fungal growth, do not occur in the mouth. It is also known that in women taking oestrogen-progesterone contraceptives, there

is an increase in the amount of vaginal candida but not in the mouth (9).

The management of pregnancy gingivitis is straightforward. Good oral hygiene, removal of mechanical irritants to reduce the gingival response to the increase level of progesterone during pregnancy are all that are required in most cases. In cases of large gingival epulides with persistant bleeding and disturbances, the lesions are best excised.

REFERENCES

1. Loe H: Periodontal changes in pregnancy. J Periodont 1965; 36: 209-217.
2. Cohen D W, Friedman J, Shapiro J and Kyle G C: A longitudinal investigation of the periodontal changes during pregnancy. J Periodont 1969; 40: 563-570.
3. Hugoson A: Gingivitis in pregnant woman. A longitudinal clinical study. Odont. Revy 1971; 22: 65-84.
4. Plass E D, Hesseltine H C and Borts I H: Monilia Vulvo — Vaginitis. Am. J. Obstet. Gynec 1931; 21: 320-334.
5. Hesseltine H C: Vulvitis due to mycosis, atrophy and avitaminosis. Am. Practit. & Digest. Treat 1955; 6: 864-867.
6. Mizuno A: Studies on candidiasis in Japan. Education Ministry of Japan. P. 1, 1961.
7. Bland P B, Rakoff A E and Pincus I J: Experimental vaginal and cutaneous moniliasis: Clinical and laboratory study of certain moniliasis associated with vaginal, oral and cutaneous thrush. Arch. Derm. Syph. (Chic.) 1937; 36: 760-780.
8. Gardner F C: Antibiot. News 1965; 21: 1.
9. Catterall R D: Influence of gestogenic contraceptive pills on vaginal candidosis. Brit. J. Vener. Dis. 1971; 47: 45-47.