

## EPISTAXIS AND PREGNANCY

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### SUMMARY

Sixty pregnant women with epistaxis were analysed. Aetio-pathogenesis of epistaxis in pregnant women is discussed in the light of available literature. It has been suggested that epistaxis is more frequent and severe during pregnancy and more liable to have complications. Pregnancy has definite effect on nasal vascularity and may initiate some of the nasal lesions or exaggerate few of the previous prevailing disorders. Epistaxis occurs more frequently in pregnant women with other complications like hypertension, toxæmia and anaemia.

### Introduction

The nasal mucosa is a part of the body that is under hormonal control and a considerable number of nasal symptoms have been described in association with hormonal changes (Taylor, 1961). Epistaxis is one of the nasal symptoms which is related to hormonal changes as evidenced by an apparent relationship between nose bleeding and menstruation cycle in women (Jones, 1971). It is clinically observed that epistaxis in females is more common during pregnancy. Review of the literature reveals scanty mention of the association of epistaxis and pregnancy. Jones (1971) states that bleeding occurs more common in pre-menstrual and menstrual

stages in women due to hormonal effect.

In most of the cases nose bleeding is a minor episode and usually ceases spontaneously. But, in pregnant women, the bleeding may take an unpredictable course and it may sometimes give rise to termination of pregnancy or, at times, to life threatening complications or even death.

It was therefore, decided to carry out a study of epistaxis in pregnancy to discover the frequency, severity and predisposing factors.

### Material and Methods

A total 632 patients with epistaxis were seen in the Department of E.N.T., Sardar Patel Medical College, Bikaner in a period of seven years from January, 1975 to December, 1981. These constitute all cases who attended E.N.T., Unit as out-patient cases, indoor cases or all those who

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were referred from the other departments like general medicine, surgery, traumatology, gynaecology and obstetrics, etc. Of these 632 cases, the females were 280. Out of 280 women with epistaxis, 60 were pregnant.

In addition to E.N.T. check up and general physical examination, including recording of blood pressure, complete blood count including platelet count, determination of bleeding and clotting time, haemoglobin, haematocrit, prothrombin time, clot retraction and thromboplastin generation time, blood sugar and urea were done. Whenever needed, supplementary laboratory investigations were also carried out e.g. blood group testing, ECG and other tests.

Epistaxis was found to occur in all trimesters and trimesterwise distribution was as follows:

Trimester	No. of cases with epistaxis
First	5
Second	21
Third	34

### Results

Examination of the nasal cavity revealed presence of some local pathology in 19 out of 60 pregnant women. The various nasal conditions are shown in Table I and in the remaining cases, the nasal bleeding was mostly from the "Little's area" but there was no previous disease responsible for epistaxis.

In systemic survey, 45 women were found to have various pregnancy complications in addition to frank nasal bleeding (Table II).

TABLE I  
*Nasal Causes of Epistaxis in Pregnant Women*

Nasal Pathology	No. of patients
1. Atrophic rhinitis	4
2. Pregnancy tumour of the nose	2
3. Septal perforation	2
4. Trauma (history)	2
5. Chronic sinusitis	3
6. Rhinitis	6
Total	19

TABLE II  
*Systemic Diseases Associated With Epistaxis in Pregnancy*

Systemic cases	No. of women
Hypertension	14
Anaemia	18
Toxaemia of pregnancy	5
Hyperemesis gravidarum	6
Liver disease	2
Total	45

The various therapeutic procedures were employed locally to control epistaxis, in addition to systemic antibiotics, coagulants and suppurative measures (Table III). A few of the cases did not require local interference.

TABLE III  
*Therapeutic Procedure to Control Epistaxis*

Procedures	No. of women
Electric cautry	15
Anterior nasal packing (Vaseline or antibiotic ointment smeared ribbon gauge)	16
Posterior nasal packing	10
Surgery (Pregnancy tumour)	2
Treatment of nasal lesions like rhinitis, atrophic rhinitis and sinusitis	9
Total	52

Even with treatment, nose-bleeding is not free from complications and these complications are more frequent in pregnant women than in others. Complications occurring in the cases under review are shown in Table IV.

TABLE IV  
Complication due to Epistaxis in 60 Pregnant Women

Complication	No. of women
Cardiac failure	1
Pneumonia	1
Transfusion reaction	1
Haemotympanum and otitis media	1
Abortion	2
Septicemia	2
Premature delivery	2
Total	10

#### Discussion

This survey has corroborated the fact that epistaxis is a problem of considerable degree during pregnancy and various factors apparently play significant role in causation of nose bleeding.

Undoubtedly hormonal changes during pregnancy seems to constitute the significant role in causation of nose bleeding. Increased progesterone level in pregnancy is responsible for increased vascularity and vasodilatation in the mucosal circulation, with increased viscosity of the venous flow. This is the major cause of epistaxis in pregnancy (Topozada *et al*, 1981). Moreover, Smith and Smith (1946) suggested that a substance 'menotoxin' is released into the blood stream as the oestrogen level decreased and that it appeared to have a toxic effect on the vascular tissue. Topozada (1979) suggested that menotoxin may be related to the primary prostaglandins (especially of the

E series) since they share many properties. A similar substance may cause vascular change in pregnancy. Another possible cause of decreased capillary fragility seems to be weakening of ground substance due to the change in proportion of oestrogen and progesterone. Whatever may be the pathogenesis, it is definite that there is increased nasal vascularity during pregnancy and also some effect on capillary fragility.

All women with pregnancy do not have epistaxis. Hence, the hormonal factor may not be the sole cause of epistaxis. Rather, it might be possible that the hormonal changes exaggerate the previously existing nasal pathology such as atrophic rhinitis, rhinitis sicca, etc. On the other hand, hormonal changes during pregnancy initiate a few new conditions like pregnancy rhinitis and haemangioma of pregnancy (granuloma pyogenicum or pregnancy tumour). These lesions are pregnancy dependent and disappears following delivery (Soni *et al*, 1981).

However, most of the women (41) were found neither to have any previous nasal pathology nor any evidence of pregnancy dependent lesions like haemangiomas lesions or rhinitis, still they had nasal bleeding. This make one to think that there are other additional factors responsible for epistaxis. These cases were found to have other systemic disorders like anaemia, toxemia of pregnancy or hyperemesis gravidarum and hypertension.

Anaemia definitely increases capillary fragility and hemodilution is a well established cause of defective coagulation. Corrections of anaemia in such cases was proved to be beneficial in controlling the nasal bleeding. Similarly, toxemia of pregnancy, as well as hypertension may be related to capillary fragility and defec-

tive coagulation mechanism by direct or indirect interference. Moreover, hypertension that occurs in pregnancy alone or associated with toxæmia may directly or indirectly be related to cortical muscle degeneration which is an essential factor in persistent nasal bleeding (Shaheen, 1970) because, the arteries with a defective muscle layer, lack the power of contraction (Juselius, 1974). These arterial changes occurring due to hypertension may only be responsible for persistent bleeding rather than the initiation of bleeding. Thus, it seems that the causative factor in the initiation of bleeding, still unknown, might be responsible for the mechanism of system of the vessel.

Taking together these facts, one is led to the conclusion that in many pregnant women hormonal changes definitely affect the nasal blood circulation and exaggerate the previously existing nasal conditions and, moreover, the women with complications like toxæmia of pregnancy, hypertension and hyperemesis gravidarum, anaemia are more prone to have epistaxis. On the other hand, it can be suggested that a pregnant women presenting with epistaxis should be investigated to exclude not only the nasal lesions but also various complications like toxæmia, hypertension and hyperemesis gravidarum. This needs a good co-ordination between an otorhinolaryngologist and obstetrician.

The treatment of epistaxis is, as yet, far from satisfactory and the risks of complications in severe cases are considerable. The present study showed that bleeding is much more frequent and severe in pregnancy. Hormonal changes, pregnancy hypertension, electrolytes imbalance (hyperemesis gravidarum), toxæmia of the pregnancy anaemia and malnutrition in pregnancy may be contributing factors. Our knowledge of the causes of nasal bleeding is, at best, very superficial and the subject needs further investigation.

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