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Nasal granuloma gravidarum

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Abstract

Nasal granuloma gravidarum is a rare condition that arises exclusively during pregnancy. It usually presents with the non-specific symptoms of nasal bleeding and obstruction though occasionally a patient may notice an intra-nasal mass herself.

Three cases of nasal granuloma gravidarum are presented to add to those previously recorded in the literature. Although the aetiology of this condition is unclear, the authors speculate that it probably represents an excessive healing response to some minor trauma sustained in a tissue primed and sensitized by pregnancy.

The management of this lesion is discussed and a simple surgical procedure described for its removal.

Introduction

Nasal granuloma gravidarum is the term used to describe a benign vasoformative growth that arises from the nasal mucosa during pregnancy. It is an uncommon condition, as emphasized by the paucity of cases recorded in the literature. Among these have been reports from Ash and Old (1950), Vaheri (1958), Bicknell (1971), Shallit *et al.* (1977), Kent and Fitzwater (1979) and Hemani *et al.* (1981).

In this paper, three further cases of nasal granuloma gravidarum are reported. Its clinical features and histopathology are described possible aetiology discussed and a management approach outlined.

Case reports

Three patients with nasal granuloma gravidarum were seen at the Royal Victoria Eye and Ear Hospital, Dublin, over a one-year period. They had a number of features in common: all were multigravid, aged in their early thirties; all presented in the third trimester with recurrent bouts of epistaxis; past histories were non-contributory in all cases; and none had had nasal symptomatology during previous pregnancies.

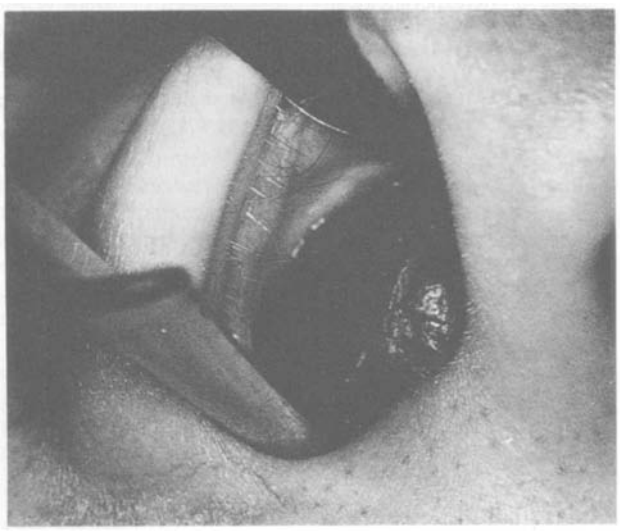


FIG. 1
Large granuloma gravidarum of the right nasal cavity (case 1).

Case 1

Mrs. B.D., aged 31 presented when she was thirty weeks pregnant. She gave a two-week history of progressive right-sided nasal obstruction, and a one-week history of intermittent epistaxis from the same side of the nose. Anterior rhinoscopy revealed a large reddish-brown mass filling the right nares (Fig. 1). It was attached to the mucosa of the anterior septum by a narrow pedicle. The lesion bled easily on probing.

Following admission to hospital, the lesion was removed uneventfully under local anaesthesia. Anterior nasal packing was inserted for 48 hours, and the patient allowed home the day following pack removal.

Review one week later showed no evidence of recurrence. However, she presented again two weeks later with further right-sided epistaxis. Examination revealed recurrence of the mass. The lesion was again removed under local anaesthesia.

When reviewed four weeks later, the lesion was seen to have recurred yet again at the same site. However, as she was asymptomatic, with no further bleeding, removal of the mass was postponed and the patient followed closely. Soon afterwards she went into spontaneous labour, with the delivery of a normal child.

Review two weeks post-partum showed the mass still present in the right nares, with no evidence of spontaneous regression. However, as it had not been bleeding, and because she was breast feeding, removal was further postponed for four weeks. This was duly done under local anaesthesia.

Subsequent reviews found no evidence of recurrence.

Case 2

Mrs. S. F., aged 34, presented when she was thirty-one weeks pregnant with a substantial left-sided epistaxis. She gave a history of slight bleeding from the same side of the nose during the two weeks prior to presentation.

Anterior rhinoscopy revealed a 2mm. x 2mm. fleshy granuloma arising from the medial surface of the left inferior turbinate near its anterior end.

The patient was admitted to hospital and the lesion removed under local anaesthesia. Anterior nasal packing was inserted for 48 hours, and the patient allowed home one day after its removal.

Review two weeks later, and again in the post-partum period, found no evidence of recurrence of the lesion.

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Case 3

Mrs. N.C., aged 33, was twenty-nine weeks pregnant when she presented. She complained of recurrent bouts of right-sided nasal bleeding and nasal obstruction on the same side. She had been having minor nose bleeds since the fourth week of pregnancy, but these had become more profuse in the few days prior to presentation. The nasal obstruction was present for only two weeks prior to presentation.

Examination showed a large, broad-based, red-brown mass in the right nostril, attached to the mucosa of the anterior septum. Its surface was ulcerated and crusted.

The-patient was managed in a similar fashion to cases 1 and 2: following admission to hospital, the lesion was removed under local anaesthesia; anterior nasal packing was removed 48 hours post-operatively, and the patient allowed home the following day.

Subsequent reviews found the patient to be asymptomatic with no evidence of recurrence.

Comment

Histopathological examination of the lesions removed in all three cases showed extremely vascular granulation tissue covered by ulcerated and inflamed squamous epithelium. These findings are consistent with a diagnosis of nasal granuloma gravidarum (see below). Figure 2 (Case 1) shows the characteristic features, and is representative of the findings from cases 2 and 3.

Discussion

Nasal granuloma gravidarum is an uncommon benign vascular growth that arises from the nasal mucosa during pregnancy. It tends to occur in multiparous women, as were the three patients presented above. However, one of the cases reported by Bicknell (1971) was a primagravid, and in the single patient described by Hemani *et al.* (1981), the tumour occurred in all five pregnancies. Interestingly, this patient had bilateral lesions.

The presenting symptom is usually that of intermittent bouts of nasal bleeding. As the lesion grows in size, the bleeding may become more profuse, and the patient often complains of increasing nasal obstruction. Occasionally, the patient may even notice an intra-nasal mass herself and, if sufficiently large, the lesion may eventually protrude through the nasal aperture. Although most patients present during the third trimester, the duration of symptoms is quite variable: case 3 (above) had sporadic nose-bleeds from the fourth week of pregnancy whereas case 2 had symptoms for only two weeks prior to presentation.

On examination anterior rhinoscopy reveals a reddish-brown mass of variable size arising from the mucosa of the anterior septum, inferior turbinate or floor of the nose. Its base may be sessile or pedunculated, and its surface is usually ulcerated and crusted. The lesion does not blanch, and bleeds easily on probing.

The characteristic histological features have been well summarized by Bicknell (1971). The lesion is covered by a surface layer of keratinized stratified squamous epithelium, often demonstrating patchy ulceration. The stroma of the mass is loose and oedematous, with a prominent vascular component

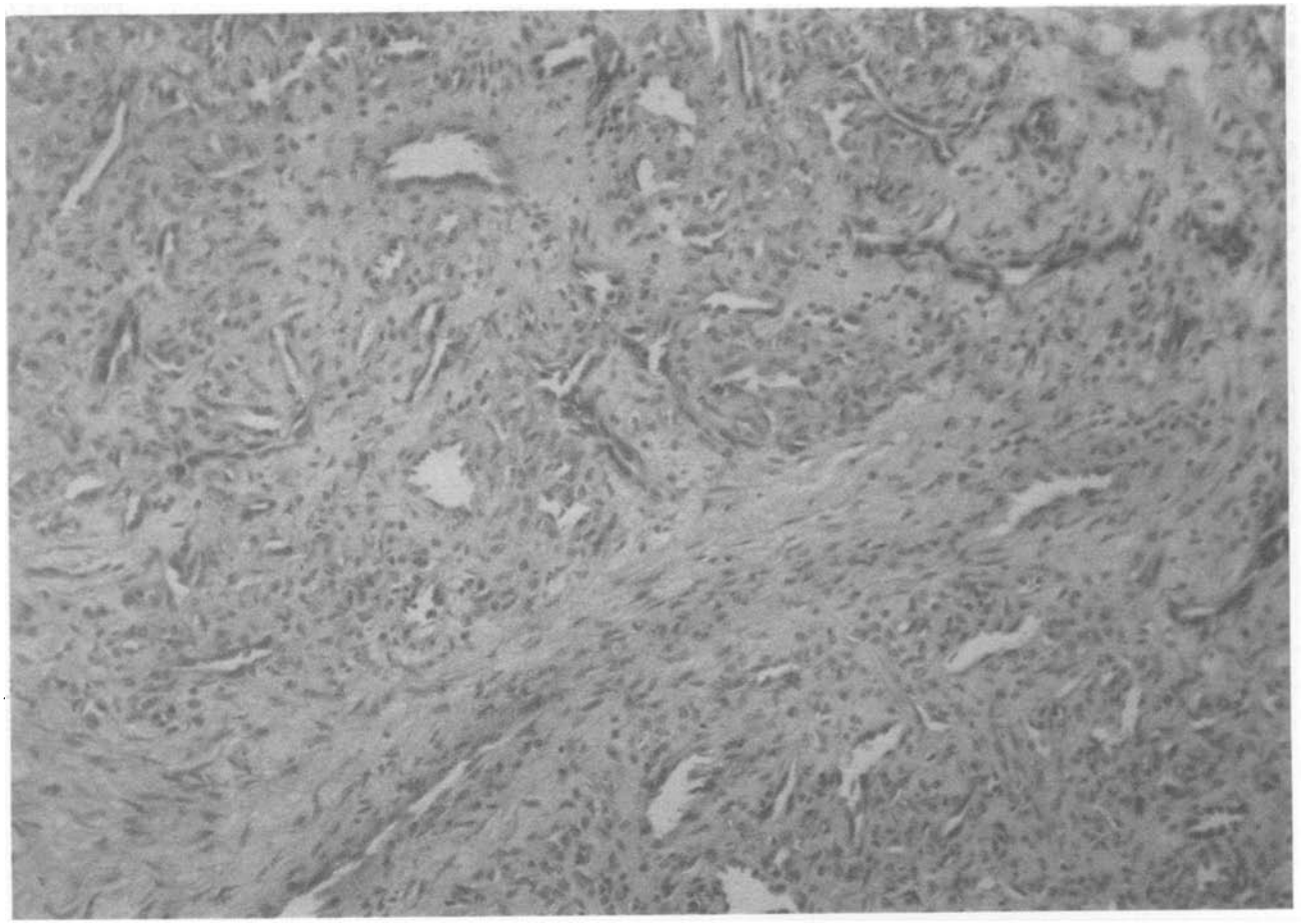


FIG. 2

Section of nasal granuloma gravidarum removed from case 1, showing extremely vascular granulation tissue rich in fibroblasts and with a moderate number of chronic inflammatory cells. Haematoxylin and eosin ×10.

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of thin-walled immature capillaries and a variable amount of inflammatory cell infiltrate. These appearances are non-specific and are identical to those of a granuloma pyogenicum (Ash and Old, 1950) and a pregnancy epulis of the oral cavity (Bicknell, 1971).

The aetiology of nasal granuloma gravidarum remains unclear. However, its occurrence during pregnancy and its tendency to regress spontaneously after delivery indicate a clear dependancy on the pregnant state.

During pregnancy, the nasal mucosa undergoes significant changes. Taylor (1961), in experimental work on pregnant animals, demonstrated increased thickness and vascularity of the mucosa, with dilated blood containing spaces deep to the lining epithelium. The findings were most marked during the second half of pregnancy, and were simulated by the administration of oestradiol injections. Similarly, Helmi *et al.* (1975), working with guinea pigs fed oral oestrogen, found increased vascularity of the nasal mucosa. They also demonstrated swelling and proliferation of the endothelial lining of the capillaries and arterioles giving rise to marked intimal thickening in these small vessels.

In addition to these changes, other factors contribute to the marked congestion of the nasal mucosa that exists during pregnancy. Vasomotor reactions of the nose are largely mediated through acetylcholine, which is liberated from the nasal parasympathetic nerve endings. This mediator is normally destroyed within 30 msec. of its release by acetylcholinesterase (Meyerhoff, 1980). Oestrogen, however, tends to slow this process down, so that during pregnancy, when oestrogen levels are high, the vasomotor response is exaggerated. Other influences which encourage nasal mucosal congestion during pregnancy include: (a) elevation of the diaphragm, which reduces pulmonary vital capacity and so enhances the nasopulmonary reflex; (b) the generalized hypervolaemic and hyperdynamic state that exists during pregnancy.

It is from this 'primed' tissue, which exhibits both proliferation in its small vessels and marked congestion, that nasal granuloma gravidarum arises. Bicknell (1971) has alluded to the potential role that trauma or cold weather may play in its development. The present authors favour the former, and speculate that this lesion represents an exaggerated and somewhat uncontrolled healing response to some minor trauma, probably inadvertently sustained while blowing or picking at the nose.

The management of patients with this lesion must be guided by consideration to their pregnant state. If close to term and the haemorrhage is not severe, the patient can be kept under observation and the lesion removed after delivery if spontaneous regression fails to occur. However, if bleeding is profuse at any stage, or the patient presents early in the last trimester with troublesome nasal obstruction, the lesion should be removed at that time to control haemorrhage and relieve symptoms.

The present authors have found that the growth can be removed under local anaesthesia without difficulty or patient distress. The nasal cavity is carefully prepared with cotton wool soaked in a solution of cocaine 4 per cent and adrenaline 1:1000. Following its removal, 2-3 ml. of xylocaine 1 per cent and adrenaline 1:200,000 is injected submucosally around the growth. If the base is pedunculated, the mass can be removed with a nasal snare and the base then excised. If the base is broad, an incision is made around it and a subperichondrial or subperiosteal elevation of the lesion affected. In either case, a small margin of normal surrounding mucosa is removed, in continuity with the base, to ensure adequate removal. A piece of gelfoam is laid over the raw area and an anterior nasal pack inserted for 48 hours. The patient is allowed home the day following removal of the nasal packing.

In contrast to previous reports of torrential bleeding during and after removal of these lesions (Bicknell, 1971), this has not been our experience. Although patients were routinely grouped and cross-matched for two units of blood, bleeding was minimal in all cases and transfusion never required.

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