Management of Severe Epistaxis during Pregnancy: A Case Report and Review of the Literature

1. Introduction

Epistaxis is a common problem during pregnancy, due to an increased nasal mucosa vascularity. The prevalence in pregnant women is 20.3% compared with 6.2% in nonpregnant ones [1]. Large volume epistaxis is rare for patients without preexisting risk factors or conditions, such as the use of anticoagulants or blood clotting disorders.

Few cases of severe epistaxis during pregnancy, not associated with nasal lesions or clotting disorders, were described in the literature. We reported a case of severe epistaxis in a pregnant patient, exploring all the different possible management options. Case. A 33-year-old primigravida, who was 38 weeks pregnant, presented with spontaneous severe left-sided epistaxis. Her blood pressure was into normal ranges. Clotting disorders and nasal lesions were excluded. The patient clinical worsening, due to severe anemia, and the failure of conservative treatment have imposed an emergency caesarean section, with an immediate resolution of the nasal bleeding. Conclusion. Treatment of severe epistaxis must always consider conservative measures first-line with early recourse to otolaryngologist. In general, delivery of the fetus is considered curative.
Epistaxis in pregnancy is common but the vast majority of cases do not require medical attention. The prevalence of epistaxis in pregnant women is more than three times that of non pregnant ones [1].

Several conditions predispose to epistaxis during pregnancy. In particular, the elevated oestrogen levels increase the vascularity of the nasal mucosa [10], which may potentiate and prolong the bleeding. Progesterone causes an increase in blood volume, which may exacerbate both vascular congestion and hence bleeding, and may mask blood loss in the event of severe epistaxis, due to apparently effective cardiovascular compensation [11]. Placental growth hormone has systemic effects, including vasodilation [11]. Indirect hormonal effects include vascular inflammatory and immunological changes that may predispose to nasal hypersensitivity and hence to problems such as nasal granuloma gravidarum [11]. In general, delivery or fetal death causes immediate cessation of the nasal bleeding, because some of the underlying factors, such as congestion and hyperemia, disappear.

Few cases of severe epistaxis during pregnancy were described in literature [2–8, 12] (Table 1). We excluded cases of epistaxis associated with nasal lesions, like granuloma gravidarum [9] and nasal polyp [13], or clotting disorders [14].

Treatment of severe epistaxis must always consider conservative measures first-line, like IV tranexamic acid administration, anterior packing and bipolar cautery. If conservative treatment fails, two radical treatments have to be considered: the one is surgical, in the form of vessel ligation, and the other is obstetrical and is termination of the pregnancy.

In our case, the patient clinical worsening and the failure of conservative treatment imposed an emergency caesarean section. The cervix was unfavorable for easy induction and a long induction of labor was considered contraindicated for this patient. Valsalva maneuvers could also aggravate the bleeding during labor, increasing the risk of fetal hypoxia. The decision to deliver was also influenced by the gestational age; in fact in the case of a preterm pregnancy, when maternal and fetal conditions are good, a conservative management is preferred, in order to avoid the possible risks associated with preterm birth.

Fetal anemia is a well-known cause of antenatal fetal distress. The case report by Braithwaite JM et al. [5] demonstrated that rapidly developing severe maternal anemia, due to recurrent blood loss of nonplacental origin, even in the absence of maternal hypotension, can cause fetal distress.

### Table 1: Cases of severe epistaxis during pregnancy not associated with nasal lesion or clotting disorders.

<table>
<thead>
<tr>
<th>Author/year</th>
<th>Number of patients</th>
<th>Management of epistaxis</th>
<th>Management of pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howard DJ 1985 [4]</td>
<td>1</td>
<td>Nasal packing; bipolar diathermy; external carotid artery ligation; nasal balloon</td>
<td>Emergency caesarean section</td>
</tr>
<tr>
<td>Braithwaite J M [5]</td>
<td>1</td>
<td>Nasal packing; nasal balloon</td>
<td>Emergency caesarean section</td>
</tr>
<tr>
<td>Hardy 2008 [7]</td>
<td>1</td>
<td>Nasal packing; bipolar cautery; artery ligation</td>
<td>Vaginal delivery</td>
</tr>
<tr>
<td>Cornthwaite K 2013 [8]</td>
<td>1</td>
<td>Nasal packing; bipolar diathermy</td>
<td>Elective caesarean section</td>
</tr>
<tr>
<td>Crunkhorn RE 2014 [9]</td>
<td>1</td>
<td>Nasal packing; sphenopalatine artery (SPA) ligation; bipolar cautery; bipolar diathermy</td>
<td>Elective caesarean section</td>
</tr>
<tr>
<td>Our case 2018</td>
<td>1</td>
<td>IV* tranexamic acid nasal packing; bipolar cautery</td>
<td>Emergency caesarean section</td>
</tr>
</tbody>
</table>

Footnotes: * intravenous.
Severe epistaxis is potentially life-threatening to both mother and fetus. This case highlights the importance of early recourse to ear, nose, and throat (ENT) referral, when epistaxis is unresponsive to simple measures. In general, when nasal lesions and clotting disorders cannot be identified, fetal delivery is considered curative, showing that hormonal changes during pregnancy may lead to significant alterations of nasal physiology, with oestrogen causing vascular congestion, mucosal oedema, and rhinitis, known as the “rhinitis of pregnancy”. Moreover, pregnancy is associated with significant anatomic and physiologic remodeling of the cardiovascular system. Starting at 6–8 weeks of gestation and peaking at 32 weeks, maternal blood volume increases by 40–50% above nonpregnant volumes [15, 16]. Termination of pregnancy resolves hypervolemia and hormonal changes; in fact in all the cases reported in Table 1, we can observe a nasal bleeding resolution after delivery.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

References
