

level of 12.4 g dl<sup>-1</sup> on the day of discharge. The pathology report on the specimen showed numerous anomalous vessels with mild inflammatory reaction.

Arteriovenous malformations of the dental arcades represent some of the most challenging lesions in the maxillofacial region. Intraosseous vascular malformations on the other hand, are caused by a disturbance in the late stages of angiogenesis (truncal stage) and result in the persistence of arteriovenous origin that are often referred to as "high-flow vascular malformations" and are often the cause of massive, sometimes fatal hemorrhages.<sup>1</sup> Gingival bleeding seems to be a symptom common to most documented cases. Many instances of massive hemorrhage, even exsanguinations, have been documented following the extraction of teeth associated with these AVMs. Extraorally, the face is often asymmetrical, with an accompanying bluish discoloration. There was none of these symptoms in our patient. Embolization, which consist of occluding vessels contributing to the lesion, has been used for sometime. Several materials, usually inserted by means of femoral catheterization, have been used: polyvinyl alcohol particles, muscle, gel foam, cyanoacrylate, metal coils, and collagen.<sup>2</sup> Some authors present this technique as a preliminary and indispensable adjunct to excision and reconstructive surgery, while others use it as the sole, definitive approach.<sup>3</sup> Embolization, combined with surgical treatment, is still the most conventional modern approach. This procedure controls the acute hemorrhagic phase, but does not eliminate the risk of recurrence, owing to the appearance of a collateral circulation. It does, however, reduce the blood flow, allowing excision surgery to be performed within anywhere from 48 hours to 2 weeks.<sup>4</sup>

Preoperative embolization of our case was successful as no significant blood loss occurred during surgery. Most of the reports deal with mandibular AVMs and it could be suggested from these date that maxillary lesions are more rare.<sup>5</sup>

Hemorrhage is the most devastating complication that can be expected in AVMs and represents even if minor, an indication for treatment in emergency. Even if the patients have never bled up to the time of the diagnosis, they should be treated expeditiously, as hemorrhage can be a potentially fatal complication. In our case, there was no history of bleeding and swelling or pain like the symptoms of AVMs.

Tooth extraction should not be considered at that time, or any other treatment on the gum, as it will just exacerbate the bleeding which may become uncontrollable. If this is the case, the patient should rapidly close his mouth and clench the teeth tightly so that the dental contact can produce homeostasis. He should then be rapidly transferred to a neuroradiology unit where endovascular therapy

will be undertaken as an emergency. Surgery seems contraindicated in this disease, at least in the first instance. It used to be performed in hemorrhagic conditions, with great technical difficulties, which most often resulted in extensive or mutilating interventions. It should, for these reasons, not be considered in these acute situations that be managed by embolization. The approach we propose, in our opinion, the best way to treat these lesions in this case as the extraction was carried out and the hemorrhage was life threatening. Hypovolemic shock occurred and her trachea had to be intubated to save the airway.

Dental extraction causes a life-threatening hemorrhage if there is AVMs and emergency management with transfemoral embolization is a simple and safe technique before surgery.

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## Health insurance. A need of time

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**I**n an ideal world, health care should be provided to all irrespective of their economic status. But in the present era of high-tech management strategies, the cost of health care has gone up and the level of care provided correlates with the social class of the patient. This becomes more valid and true in situations utilizing the intensive care facility of the

hospital.<sup>1,2</sup> Many of the expatriates working in Middle Eastern countries, especially the labor class, do not have access to full medical insurance and health coverage. This situation may lead to acute crisis.

A baby boy of an expatriate family born at a local private maternity center in Muscat, Oman was noted to have severe cyanosis soon after birth. The baby was immediately transported to the tertiary center for further care. On arrival to the accident and emergency, the baby was noted to be in severe distress with oxygen saturations of 40-50%. The baby was immediately intubated and transferred to the neonatal intensive care unit. An urgent echocardiogram was obtained which showed severe hypoplastic heart syndrome, a severe form of cyanotic heart disease. This family unfortunately had no free medical coverage or health insurance and as per the hospital policy they deposited a reasonable amount on admission. The father and uncle who had accompanied the baby were counseled in detail on the gravity of the situation and critical condition of the baby. A detailed discussion was carried out including the different aspects of disease, treatment options, predicted prognosis and potential cost involved. It was told to them that their baby's condition requires multi-staged cardiac surgeries for which the baby has to be transferred to a specialized center abroad. The issue of 'do not resuscitate (DNR)' was also brought up, as the condition was non-salvageable in our set up. In view of the severity and non-salvageability of the condition, the family agreed to the DNR decision in accordance with the available guidelines.<sup>3,4</sup> The baby's condition gradually deteriorated and no aggressive intervention was offered. The baby died within 2 hours of admission to the unit. This family ended up paying all the costs incurred in the care of the baby.

As a DNR decision was taken early, the cost was limited. But one could imagine the cost with continual intensive care management for days with the same outcome. Would a free health coverage plan or insurance have changed the family's decision or baby's outcome? May be not. But this type of emergent case, and many more, reiterate the need for health insurance for all, as recently indicated.<sup>5,6</sup>

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