Endoscopic-assisted medial osteotomy during sagittal split ramus osteotomy

In this article, we describe endoscopic-assisted medial ramus osteotomy during sagittal split ramus osteotomy (SSRO).

Surgical repositioning of the mandible by bilateral SSRO has become a safer and more reliable procedure through ingenuity of surgical methods, development of special instruments and improvement of surgical skills. The horizontal medial osteotomy should be located at or just above the tip of the lingula and terminated just posterior to the lingula, and carried through the lingual cortex into the medullary bone of the mandibular ramus.1 However, unfavourable fractures sometimes occur during the intraoral approach.1,2 When the osteotomy is terminated anterior to the lingula, the bone tends to split anterior to the lingula. Osteotomy located too far superior to the lingula or angled too far upwards and not parallel to the occlusal plane may also risk unfavourable fractures, which includes the condylar process. The lingula, therefore, should be carefully identified to avoid such complications. However, even after reduction of the internal ridge with an angled blade, it is not always easy to visualise the lingula due to the convex form of the intraoral oblique ridge. In such cases, the medial bone must be cut under poor visibility.

An endoscope provides excellent visualisation in many operative situations, and has been applied for vertical ramus osteotomy in orthognathic surgery.3 For SSRO, however, we found only one report of an unfavourable fracture of the ramus that had been repaired using an endoscopy-assisted technique.4 We used a 30, 67 mm-long endoscope with a 4 mm diameter and a concave blade retractor connected to a video camera system (Karl Storz, Tuttingen, Germany) for medial osteotomy during SSRO (Figure 1). The device was originally developed for assisting in the reduction of subcondylar fractures.5 After conventional soft tissue and periosteum incision, and exposure of the bone surface of the anterior ramus, medial soft tissues are reflected subperiosteally to the posterior border of the ramus. The endoscope is inserted along the medial side of the mandible. A focal distance of 30 mm and a wide visual angle are adequate for direct visualisation of the medial operative site, notch of the lingula, mandibular notch and condylar process. The posterior border of the ramus can also be visualised by slight to-and-fro movement of the endoscope. The retractor provides enough space for the use of operative instruments (Figure 2). This method not only decreases invasiveness to the surrounding tissue, such as rapid haematoma originating from the retromandibular vein, but also avoids neurosensory disturbance resulting from excessive stretching of the inferior alveolar nerve as it enters the foramen.

References


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Strategy for management of skin necrosis in neonates with lower extremity vascular birthmarks

Skin and soft tissue necrosis occurs rarely in neonates, although paediatric and plastic surgery services should beware of this urgent condition. Associated life-threatening alterations of blood pH or progressing thrombocytopenia may be an indication for acute surgery, which may consist of wound debridement and delayed resurfacing. Neonatal skin necrosis has been previously described in the literature. Most cases report infants who contract severe bacterial infection (generally meningococcal), with consequent septicemia and associated necrosis. Additional cases have been described as a consequence of intrauterine compression, as well as in newborns of diabetic mothers, who have a higher tendency to develop intravascular coagulation. Vascular anomalies may also account for the differential diagnosis and are easily misdiagnosed. Regardless of the cause, the majority of patients require some form of surgical intervention, by means of skin grafts, flaps, or amputations.

We report on a case of neonatal skin necrosis treated conservatively.

A 2-week-old male infant was admitted to our hospital with a 2-day history of a necrotic wound on his left ankle over the medial malleolus (Figure 1). This patient was a full-term infant who had been vaginally delivered on vertex presentation. He had no past illness, admission or trauma except for a history of an active vascular birthmark on his left heel over the Achilles tendon, which was diagnosed on clinical grounds only. Grossly, the wound appeared sloughy. It displayed a necrotic base and overlying granulation tissue, with little signs of cellulitis extending over the lower extremity. There was evidence of a vascular lesion at the wound edges, namely a spotty macular purple-staining lesion suggestive of a capillary haemangioma. He was non-febrile, his X-ray was normal and he had a full range of motion in his foot and ankle. A wound swab culture was positive for methicillin-sensitive Staphylococcus aureus (MSSA). His wound was dressed daily with Intrasite conformable and 1% hydrocortisone cream was applied sporadically to the overgranulation areas. He had a 3-day course of intravenous flucloxacillin 200 mg and benzylpenicillin 200 mg. He was discharged on day 7 with a non-active ulcer revealing signs of healing. At 1 year follow up the patient was asymptomatic, although some areas of vascular malformation were still present peripherally (Figure 2).

Skin necrosis is an unusual clinical entity in neonatal units but it is important that surgeons are familiar with its differential diagnosis and assessment strategies. Many individuals require resurfacing surgery at some stage, generally by split-skin grafting.

Cutaneous vascular lesions are the most common paediatric birthmarks (1–2% of neonates), the majority of which are benign. They are classified as either haemangiomas (commonly raised lesions, more rarely flat, tending to regress) or vascular malformations (normally flat lesions tending to persist). Haemangiomas usually resolve spontaneously. However, prior to resolution ulceration can occur, with the possibility of infection. Staphylococcus aureus is the most common bacteria in infected cases.