# Frontoethmoidal meningoencephalocele

The holes from the anterior cranial fossa are at the site of the foramen cecum. The facial component of the defect determines the sub-classification: naso-frontal, naso-ethmoidal and naso-orbital. The cranio-facial deformity may consist of hypertelorism, orbital dystopia, elongation of the face and dental malocclusion. These reflect the distorting influence of the extruded intracranial contents on facial growth. Early removal of the meningoencephalocele by the cranio-facial route is recommended to allow normal growth forces to be re-established. In older patients with established deformities translocation of the orbits may be necessary [1)].

The surgical procedures for frontoethmoidal encephalomeningocele are complicated, particularly for the infant. In order to achieve the final surgical purpose, it needs multiple department cooperation to make the surgical plans [2)].

## Case series

30 patients suffering from a frontoethmoidal meningoencephalocele underwent surgery successfully at the Rose Charities Surgical Rehabilitation Center, Kien Khleang, Phnom Penh, Cambodia. To the authors' knowledge, this is the first reported series of operations in this geographical region to treat meningoencephaloceles at a relatively primitive surgical center. Difficulties faced in this series included tropical conditions, problems ensuring sterility, and limited technical support.

Conclusions: The authors present the neurosurgical highlights and the outcomes in this series of patients. The single approach, via a bicoronal skin incision and small frontobasal trepanation, facilitates closure of the frontal skull defect and resection of the meningoencephalocele (including its extension into the facial area), as well as a satisfactory, one-step correction of the nasal skeleton and telecanthus [3)]

## Case reports

Shamaeraotan et al. presented the case of a 4-months-old infant who was found to have a frontoethmoidal encephalomeningocele that was only discovered after birth, the volume increased gradually. After multiple department discussions, the procedures were planned in 2-staged surgical protocol comprising of the first stage urgently performed by neurosurgeon and craniomaxillofacial surgeon, which aimed at removal or repositioning of nonfunctional cerebral tissue, closure of the dura, and reconstruction of skeletal; then second stage was performed by plastic surgeon to correct craniofacial hard and soft tissue deformities.

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A 9-month-old girl who was referred for rhinorrhoea. She had a history of posthaemorrhagic ventricular dilatation. Brain computed tomography (CT) and magnetic resonance imaging (MRI)

showed a left ethmoidal meningoencephalocele and small ventricular size. The meningoencephalocele was surgically repaired using an intradural subfrontal approach. During the postoperative period, after the transient lumbar drainage was withdrawn, she developed symptomatic hydrocephalus. Ventriculoperitoneal shunting was required.

Progressive ventricular dilatation may arise from a meningoencephalocele/Cerebrospinal fluid fistula in paediatric patients. Early identification and repair of the meningoencephalocele are critical to avoid development of complications [5].

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