A 10-year Review of Intracranial Haemorrhage in Term Neonates

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Abstract
A retrospective chart review of 18 cases with imaging confirmed diagnosis of intracranial haemorrhages (ICH) delivered at term in Tuen Mun Hospital between January 1995 and December 2004 was done. The demographic data, perinatal events, clinical characteristics, treatment and long term outcome were reviewed. The commonest mode of delivery was vacuum extraction. The most prevalent perinatal event identified was fetal distress. In contrast with previous studies, coagulopathy was present in only one newborn. Ten infants (55.6%) presented with seizures, nine of them developed within the first 72 hours. For babies with intraparenchymal and/or extra-axial haemorrhages, they presented uniformly with seizure. For peri/intraventricular haemorrhages, the presentation was more varied. Only one infant required surgical intervention and during a mean follow-up period of fifty-five months in fourteen patients, ten children with an uncomplicated ICH demonstrated normal neurological outcome.

Key words
Full-term neonates; Intracranial haemorrhage

Introduction
Intracranial haemorrhage (ICH) is an uncommon event in full-term neonates. The clinical characteristics of ICH in full-term infants have been described in several case series or studies. However, local data are yet lacking. With variation of disease pattern across the globe and changes in obstetrical and neonatal practice, clinical patterns, management and prognosis may change over time. In the recent decade, declining rates of instrumental (vacuum or forceps) delivery and rising rate of cesarean delivery are observed in oversea series and in our center. This may result in decreasing incidence of birth trauma and birth asphyxia. The high frequency ventilation (HFV), inhaled nitric oxide (iNO) therapy and extracorporeal membranous oxygenation (ECMO) were used in the neonatal population since 1990s. Thus, previously non-salvable critically ill neonates may survive today under intensive care, at the cost of more iatrogenic complications. This case series will outline the demographic characteristics, common perinatal events, clinical characteristics, treatment and long-term outcome in a consecutive series of 18 full-term neonates with imaging confirmed ICH in the past decade.

Patients and Methods

Patients Identification
Full-term newborns with imaging (ultrasonography, USG, computed tomography scan, CT scan, or magnetic resonance imaging, MRI) confirmed diagnosis of ICH delivered in Tuen Mun Hospital between January 1995 and December 2004 were identified and included in the study through a computerised search of the International