

BIRTH INJURIES AMONG NEW BORN: A REVIEW OF 192 CASES IN KUMASI

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ABSTRACT

The incidence, trend, types and complications of physical birth injuries occurring among newborns at the Komfo Anokye Teaching Hospital (KATH), Kumasi, were studied in a 5-year retrospective review of the records of all deliveries and early neonatal admissions to the hospital between January 1, 1990 and December 31, 1994.

A total of 192 cases of birth injuries were seen. Of these, 138 (71.87%) occurred among 46,113 deliveries at KATH, giving an incidence of 2.99 birth injuries per 1000 among hospital deliveries. Fifty-four injuries (28.13%) occurred among babies delivered elsewhere. There was a slight upward trend in incidence over the years studied. Soft tissue injuries (34.38%) were the most common followed by intracranial injury (33.33%). There were two cases of visceral rupture; each of these babies died. The case fatality rate for a newborn with an intracranial injury was 33%. Prevention of birth injury, especially intracranial injury, must therefore be a component of any plan to minimise perinatal morbidity and mortality.

Keywords: Birth injury, newborn.

INTRODUCTION

Injuries to the neonate occur along a spectrum ranging from minor abrasions to major trauma. Some injuries, such as hypoxia, which is a chemical injury, may go unnoticed but could result in serious complications later in life [1, 2, 3]. Other injuries, mainly the physical injuries, readily attract attention and may also have immediate or long term complications. The leading cause of perinatal death in a study in a northern Nigerian rural community was identified to be trauma sustained at birth [4] and

hypoxic brain injury resulting from birth asphyxia was found to be the main cause of neonatal death in a study in Uganda [5]. In Ghana, birth injury has been identified as a cause of stillbirth [6].

Although neonatal birth injuries are associated with events in labour and delivery, many birth attendants do not get a feedback concerning the impact on the neonate of these events and there is no published data on the subject in Ghana. This study was therefore undertaken to determine the incidence, trend, types and complications of physical birth injuries among neonates at the Komfo Anokye Teaching Hospital (KATH) in Kumasi. Documentation of these lesions should help highlight the problem of birth injuries and should make birth attendants adopt a positive attitude towards their prevention.

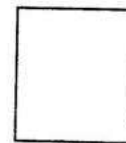
MATERIALS AND METHODS

KATH is the teaching centre of the University of Science and Technology, School of Medical Sciences. The labour and delivery unit admits booked, unbooked, referral and emergency labour cases. The neonatal unit admits all babies delivered at KATH, babies delivered elsewhere but who develop complications, and other ill neonates.

The study population consisted of all cases of early neonatal physical birth injuries admitted to the neonatal unit between January 1, 1990 and December 31, 1994. Data were abstracted from the labour and delivery records and from the records of the neonatal unit. The Medical Records and Statistics Department of the hospital provided data on the total number of deliveries each year. The data was analysed manually by the statistical methods of proportions and means.



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The total number of deliveries occurring in the community outside of KATH could not be ascertained. The diagnosis of intracranial injury was made on clinical grounds because head scanning using sonography or computed tomography are not available at KATH for confirmation of the clinical diagnosis.

RESULTS

A total of 192 cases of physical neonatal birth injuries occurred during the review period. Injuries occurred among 122 males and 70 females, giving a male-to-female ratio of 1.74 to 1. The mean birthweight of the male babies was 3,218 g (sd 0.54) and of the female babies 3,043 g (sd 0.52).

Of the 192 cases of birth injuries, 138 (71.87%) occurred among babies delivered at KATH. There were 46,113 total deliveries during the period under review, yielding an incidence of birth injury of 2.99 per 1,000 deliveries.

The yearly incidence of birth injuries at KATH is given in Table 1. The yearly distribution of all birth injuries and the location in which they occurred is given in Table 2. The categories of birth injuries are given in Table 3. Soft tissue injuries were the most common (34.38%), followed by intracranial injury (33.33%), fractures (16.66%) and nerve palsies (14.04%). The most common complications of the injuries were low Apgar scores (below 7 at 5 minutes) 71%, clinical neurological deficits 51%, anaemia 43%, jaundice 39%, limb deformity 15% and death 13%.

The case fatality rate for intracranial injury was 33% and for fractures 3%. There were two cases of visceral rupture, both of whom died. The first case involved the rupture of an exomphalos and the second was a case of liver rupture. There were no deaths resulting from cephalhaematoma, contusion, lacerations and nerve palsies.

DISCUSSION

The incidence of neonatal physical birth injuries from the hospital-based records in this study was found to be 2.99 per 1000 deliveries. The figure compares favourably with that of 2-7 per

1000 deliveries quoted in the literature [7]. However, a slight upward trend in annual incidence over the study period was noticed if the figure for 1994, the year in which medical doctors in Ghana embarked on an industrial action for over six months, is ignored.

The higher rate of injuries among the male babies in this study is probably the result of their bigger birthweight and therefore the likelihood of difficult manipulations during their delivery since with large babies dystocia may arise during delivery of the head or shoulders [8]. The smaller number of cases from among deliveries outside KATH underscores the problem of under reporting since many more deliveries occur outside the teaching hospital. Indeed, over two-thirds of babies are born at home in developing countries [9]. The implication in this finding is that there are probably many more babies injured at birth at home who do not receive proper medical treatment and so risk developing permanent disability. Some cases of spastic paralysis, epilepsy and mental retardation could originate from such injuries sustained at birth. The immediate complications of birth injuries identified in this study were neonatal cardiorespiratory depression, neurological impairment such as paralysis, palsies, rigidity, twitching and convulsions, anaemia, jaundice and death.

The clinical approach to the diagnosis of intracranial injury could have led to the overdiagnosis of the condition. This may explain the high proportion of 33% in this series. Nevertheless, this should be viewed as useful data to prompt the highlighting of the prevention of birth trauma in obstetric practice.

The benefit of ensuring the safe delivery of the newborn lies in its contribution to the beginning of a healthy life outside the womb. In response to the widespread childbearing-related maternal deaths and injuries [10, 11, 12, 13], network programmes such as Safe Motherhood and Prevention of Maternal Mortality have been instituted. These have focused attention on, and made the world now conscious of, these pregnancy-related maternal complications. We recommended similar efforts for the prevention of neonatal birth injuries through the

Table 1: Yearly incidence of birth injuries at KATH

Year	Number of Birth Injuries	Total number of Deliveries	Incidence of Birth Injury per 1,000 deliveries
1990	23	10,797	2.13
1991	29	10,667	2.72
1992	37	9,534	3.88
1993	37	9,864	3.65
1994	13	5,251	2.48
Total	138	46,113	2.99

Table 2: Distribution of birth injuries by year and place of Occurrence

Year	KATH	Home Delivery	Private Midwife	Other Clinics	Total
1990	23	4	1	7	35
1991	29	2	2	3	36
1992	37	3	4	4	48
1993	36	8	5	2	51
1994	13	3	1	5	22
Total	138	20	13	21	192

Table 3: Types of birth injuries

Type of Injury	Number	Percentage
<u>Soft Tissue Injury</u>	66	34.38
Celphalhaematoma	43	22.40
Laceration	10	5.21
Contusion	10	5.21
Abrasion	3	1.56
<u>Intracranial injury</u>	64	33.33
<u>Fractures</u>	32	16.666
Humerus	13	6.77
Femur	13	6.77
Clavicle	4	2.08
Skull	2	1.04
<u>Nerve injuries</u>	27	14.07
Erb's palsy	21	10.94
Facial nerve injury	6	3.13
Visceral rupture	2	1.04
Subconjunctival haemorrhage	1	0.52
TOTAL	192	100

improvement of reproductive health skills in the conduct of labour and delivery. There is the need to avoid difficult manipulative vaginal deliveries including those of breech and to judiciously use caesarean section when there is fetopelvic disproportion since this procedure has a lower incidence of birth injury than those associated with difficult vaginal manipulative deliveries [14]. At the community level, we advocate the intensification of public health education within the Primary Health Care system to encourage the referral of all neonates with injuries to the hospital for treatment.

In conclusion, we have found that the incidence of physical birth injuries is 2.99/1,000 among hospital deliveries in Ghana and that there is a slight upward trend. Furthermore, potentially fatal complications are associated with these injuries. Birth attendants must therefore improve intrapartum care by adopting a positive attitude towards the prevention of this cause of neonatal mortality and morbidity.

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