Obstetric brachial plexus injury in subsequent deliveries

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MM Al-Qattan, AAF El-Sayed, TM Al-Kharfy, NAM Al-Jurayyan. Can J Plast Surg 1996;4(4):203-204. Two cases of obstetrical brachial plexus injury in subsequent deliveries in the same family are described. Medicolegal aspects, review of the literature and recommendations regarding its prevention are given.

Key Words: *Birth injury, Birth palsy, Brachial plexus, Obstetric palsy*

Lésion obstétricaux du plexus brachial lors des accouchements subséquents

RÉSUMÉ : Deux cas de lésions obstétricales du plexus brachial lors d'accouchements subséquents dans une même famille sont décrits ici. Les aspects médico-légaux, une revue de la littérature et des recommandations au sujet de sa prévention sont également présentés.

Obstetric brachial plexus injury has gained recent attention in the plastic surgery literature because of advances in microsurgery and nerve reconstruction (1-8). Brachial plexus birth palsy is a relatively rare injury and occurs in about one in every 1000 live births. In the modern literature, it is rare to find more than one affected child in the same family. In this paper, we report on obstetric palsy in two subsequent deliveries from the same woman. Medicolegal aspects, a review of the literature and recommendations for prevention of this injury are discussed.

CASE PRESENTATIONS

Case 1

A four-year-old girl presented to the brachial plexus clinic in Riyadh, Saudi Arabia with residual left total birth palsy. She was born vaginally at another institution after a full term uncomplicated pregnancy. The presentation was vertex, and delivery was difficult and complicated by shoulder dystocia. At birth, left total birth palsy and an ipsilateral clavicular fracture were evident. Birth weight was 4.4 kg. Good recovery of the motor power occurred, but the functional use of the limb was impaired because of an internal rotation contracture of the shoulder. Rotation osteotomy of the humerus was performed with no complications.

Case 2

A two-year-old boy (brother of case 1) presented at the brachial plexus clinic in Riyadh with residual left Erb's palsy. He was born vaginally at another institution (same

institution where the sister was born but not delivered by the same obstetrician) after a full term uncomplicated pregnancy. The presentation was vertex, and delivery was difficult and complicated by shoulder dystocia. At birth, an isolated left Erb's palsy was evident. Birth weight was 4.6 kg. Good recovery of the motor power occurred but the functional use of the limb was impaired because of an internal rotation contracture of the shoulder. A soft tissue release procedure is planned.

MATERNAL HISTORY

The mother of both cases gave birth to a total of six children. The history of the deliveries and the babies' birth weights are given in Table 1. The two children with birth palsy were the only ones born in hospital. Increasing birth weight was also noted in succeeding children.

DISCUSSION

The hand surgeon is involved in the assessment of birth palsy cases which are frequently medicolegal problems. The skill of an accoucheur may be questioned when several damaged infants are delivered by the same person (9). The most serious charge in the literature was against a French midwife, reported by Guillemot (10) to have delivered more than 30 affected infants. Although both cases presented here were born at the same hospital, but they were not delivered by the same obstetrician. The birth palsy in these cases probably occurred as a result of excessive birth weights (Table 1).

TABLE 1: Children in family

Child	Sex	Birth weight (kg)	Presentation/ delivery	Place of delivery
1st	Male	3.0	Vertex/vaginal	Home
2nd	Male	3.2	Vertex/vaginal	Home
3rd	Male	3.3	Vertex/vaginal	Home
4th	Female	3.6	Vertex/vaginal	Home
5th*	Female	4.4	Vertex/vaginal	Hospital
6th*	Male	4.6	Vertex/vaginal	Hospital

**With birth palsy*

In multiparas, it is not uncommon to find increasing birth weights in succeeding newborns. Therefore, the potential for birth injury in subsequent pregnancies must be considered when a mother has delivered a large newborn with a brachial plexus injury. In 1973, Gordon et al (11) reported on 34 multiparas who gave birth to infants with birth palsy. Five of the 34 mothers (15%) had previously delivered infants with a brachial plexus injury. We could not find any study in the literature investigating the actual risk of having a second affected child in a subsequent pregnancy.

After the delivery of a child with birth palsy, should consideration be given to delivery of subsequent infants by caesarean section? It must be recognized, however, that

caesarean section is not a guarantee against fetal injury. Spinal cord injury, depressed skull fractures, fractures of limb bones and birth palsy have been described in newborns delivered by caesarean section (5,8,12). However, Al-Qattan et al (8) reviewed the English literature over the past decade and found that birth palsy in newborns delivered by caesarean section was extremely rare (1% of all birth palsy cases). This very low incidence was noted despite the fact that all countries report consistent increases in caesarean section rates (average 15%) over the past decade (13).

In conclusion, multiparas who have previously delivered large infants with a brachial plexus injury should be considered as high risk, and subsequent deliveries should be closely supervised by a qualified obstetrician. Furthermore, consideration could be given to delivery of subsequent infants by caesarean section.

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