Pediatrik Cerrahi Dergisi 3: 149-150, 1989

Does mode of delivery influence outcome in neonatal surgical conditions?

AE MacKNNON, NM OKORIE, JAS DICKSON
The Children's Hospital, Western Bank, Sheffield. S10 2TII England.

Summary

During the period between 1979-1986, 31 cases of diaphragmatic hernia, 20 cases of abdominal wall defects (exomphalos major, hernia into the cord and gastroschisis) were managed. Only 4 of them had been diagnosed antenatally. Our current advice, therefore, is that if a pregnancy is to continue, a normal term delivery should be planned in a unite as near as possible to the paediatric surgical department. If the diagnosis of gastroschisis or even hernia into the cord is made antenatally, we see no indication for considering termination unless there is a major associated malformation. If a diaphragmatic hernia is diagnosed, then meticulous cardiac examination should be performed, and if it is normal we see no indication for termination. In cases of exomphalos major, the main prognostic factor is the association of a significant cardic defect. Therefore a decision on termination depends mainly on this examination.

Introduction

The increasing application of antenatal ultrasound, with greater operator skills and improved technology, has led to a higher detection rate of a variety of congenital anomalies. It has become necessary for guidelines to be drawn up regarding the mode, timing and place of delivery, so that obstetrician, paediatrician and paediatric surgeon can provide the optimum management of each case. Literature on this subject contains conflicting advice, often laying more emphasis on the presence of associated anomalies. We are frequently asked for advice specifically in cases of the gastroschisis and exomphalos group of conditions, as we have made a retrospective review of these cases admitted to the Children's Hospital in Sheffield between 1979 and 1986, to determine whether the mode and time of delivery had had any evident influence on the outcome.

During this period, we have managed 31 cases of diaphragmatic hernia, 7 of exomphalos major, 6 of hernia into the cord (aslo known as exomphalos minor) and 7 with gastroschisis. Only 4 cses had been diagnosed antenatally; 6 were born before 38 weeks' gestation. Caesarean section and forceps-assisted delivery were employed in 9 babies specifically for foetal distress.

Adress: AE mackinnon MD-Department of Pediatric Surgery, The Children's Mospital, Western Bank, Sheffield s 10 2TH Ensland.

Resuts

Diaphragmatic hernia:

Of the 31 cases of diaphragmatic hernia, only one was diagnosed antenatally and was deliverd normally at term and survided. In all, 23 patients were delivered normally and of these 8 died in the neonatal period and one after 6 weeks, all from pulmonary hypoplasia. Four patients were born by Caesarian section, of whom 2 died in the neonatal period from pulmonary hypoplasia and one died after six weeks from pulmonary infection.

Two of the 4 patients born by forceps delivery died in the neonatal period from pulmonary hypoplasia and the other 2 died after 6 weeks, one from pulmonary hypoplasia and one from intestinal obstruction.

Three of the 31 were born preterm, one by forceps who died after 2 months, and 2 normally who died within 10 days of birth.

Exomphalos Major:

Seven babies were born with an exomphalos major and all by normal delivery, and in none was the sac ruptured. Three were diagnosed antenatally and the pregnancies continued to term. Of the 4 suspected cases, one was born preterm and survived. Two patients died, one between the 4th and 6th week from Fallot's Tetrology and one after 6 weeks from diarrhoea and vomiting.

Gastroschisis:

None of the 7 cases of gastroschisis were diagnosed antenatally and all were delivered normally,

though 2 were preterm. All patients survived the postoperative period, but unfortunately three died after 6 weeks from intestinal obstruction.

Hernia into cord:

We had 6 full term babies with a hernia into the cord, none diagnosed antenatally. One required assisted forceps delivery because of foetal distress, but all survived.

Discussion

We have chosen to review these two apparently diverse groups of lesions, namely diaphragmatic hernia and abdominal wall defects, firstly because our advice regarding antenatal management of the foetus has been sought, and secondly because they are associated in so far as they both represent examples of herniation of abdominal viscera.

The earliest method of diagnosing abdominal wall defects depended on estimating alpha-foetoprotein levels and, prior to accurate ultrasoud diagnosis, termination was often recommended. Now that good prognosis has been established in the management of gastroschisis and exomphalos, in the absence of major associated anomalies, termination can no longer be advised without specific indications. Unfortunately, there has been little progress in the survival of babies born with a diaphragmatic hernia, the prognosis deending on the development of the contralateral lung. At present, there is no antenatal technique to measure this.

If these pregnancies are to proceed, then we need to consider the time and method of delivery. There can be no justification for preterm delivery [1], even with cases of gastroschisis, since the bowel has a remarkable ability to recover from its exposure. We have, during the period of study, had a regrettably high late mortality from complications of intestinal obstruction, but most centres now report survival rates of around 85 %. In fact, subsequent to this review, we have not had a late fdeath.

Concerning the mode of delivery, particularly in regard to cases of abdominal wall defects, authors often have recommended that the babes are delivered by Caesarean section, but with no supporting evidence [2]. From our results, we can find no evidence that vaginal delivery at term is in any way detrimental to the patient and agree with Bethel et al [3] and Sermer et al [4]. In cases of diaphragmatic hernia, it was not surprising to find that foetal distress was associated with a high mortality.

Our current advice, therefore, is that if a pregnancy is to continue, a normal term delivery should be planned in a unit as near as possible to the paediatric surgical department. If the diagnosis of a gastroschisis or even hernia into the cord is made antenatally, we see no indication for considering termination unless there is unusually a major associated malformation. If a diaphragmatic hernia is diagnosed, then meticulous cardiac examination should be performed, and if normal we see no indication for termination. Likewise, in cases of exomphalos major, the main prognostic factor is the association of a significant cardiac defect. Therefore a decision on termination depends mainly on this examination. However, some authors have found up to a 20 % incidence of chromosomal anomalies, usually Trisomy 13 or 18, so it would seem justifiable to perform amniocentesis [4].

The one interventional step that would benefit patient, mother and attendants is planned induction, so that delivery occurs at a reasonable hour and the paediatric surgeon can make plans.

Acknowledgement:

We are grateful to Mrs. A. Jones for secretarial assistance.

References

1. Calisti A, Manzoni C, Perrelli L: The foetus with an abdominal wall defect: management-outcome. J Perinat Med, 15:105, 1987.
2. Hasan S, Hermansen MC: The prenatal diagnosis of ventral abdominal wall defects. Am J Obstet Gynecol, 155:842, 1986.
3. Bethel CA, Seashore JH, Touloukain RJ: Cesarean section does not improve outcome in gastroschisis. J Pediatr Surg, 24:1, 1989.
4. Sermer M, Benzie RJ, Pitson L, Carr M, Skidmore M: Prenatal diagnosis and management of congenital defects of the anterior abdominal wall. Am J Obstet Gynecol, 156:300, 1987.