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Nonoperative Treatment of Exomphalos (Omphalocele)

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Summary

Olowe, S. A. (**1975**). *Nigerian Journal of Paediatrics*, **2** (1), 22. **Nonoperative Treatment of Exomphalos (Omphalocele)**. In a period of 16 months 10 cases of exomphalos were treated in the Department of Paediatrics, Lagos University Teaching Hospital. Of the 10 cases, 8 were treated nonoperatively and only one of the 8 patients died following operative intervention which was necessitated by the development of adhesive intestinal obstruction. The second death in the series occured soon after operative procedure on an infant born with ruptured exomphalos. Neither operative nor nonoperative treatment was given to the third child who died six days after admission. Our experience in the management of this small number of cases shows that nonoperative treatment of exomphalos is simple, safe and has a low mortality rate. In view of the prolonged hospitalization required by this method of treatment, it is suggested that evaluation of outpatient management be undertaken.

EXOMPHALOS is a congenital defect in the anterior abdominal wall which permits intra-abdominal contents to herniate through the umbilical ring into a sac consisting of peritoneum and amniotic membrance. It occurs in approximately 1 in 6,000–10,000 births among the Caucasians (Soave, 1963; Wilkinson, 1973). Although its true incidence in Nigeria is not known, Gupta (1969) has reported 3 cases out of 4,220 births, i.e., 1 in 1,408 births, thus suggesting a very high incidence among Nigerian children.

The treatment of exomphalos is either operative or nonoperative. The mortality rate among patients treated surgically is about 40 percent regardless of the method of surgical treatment which is employed (Wilkinson, 1973; Firor, 1971). According to Firor the high surgical mortality is due to the effects of an excessive increase in intraabdominal pressure caused by returning a mass of viscera into an underdeveloped abdominal cavity. In an attempt to reduce the high mortality nonoperative treatment has been advocated (Grob, 1963; Soave, 1963; Firor, 1971). This method of treatment consists of prolonged painting of the exomphalos sac with 2 percent mercurochrome solution. The purpose of this communication is to review our experience in the management of ten cases of exomphalos admitted into the neonatal unit, Department of Paediatrics, Lagos University Teaching Hospital, Lagos, over a period of 16 months (May, 1972–September, 1973).

Subjects and Methods

There were 10 infants (5 males and 5 females). Of these, 7 (70 percent) were admitted on the first day of life; one on the second day, and two

on the third day of life. The weight of the infants ranged between 2.2 and 4.3 kg (mean 3.3 kg). Only two of the infants weighed less than 2.5 kg.

Investigations carried out in each of the patients included blood sugar estimation, chest and abdominal radiographs.

On admission the intact exomphalos sac was cleaned with Hibitane solution (1:2,000), and painted thereafter three to four times daily with 2 percent solution of mercurochrome in spirit. This method of treatment was not employed if the sac had ruptured or there was an associated intestinal obstruction.

The management of the ten infants in this series was operative in one, operative and mercurochrome painting (nonoperative) in one other infant, nonoperative alone in seven and no treatment in the remaining infant.

Results

Of the ten infants 7 (70 percent) survived and three died. The duration of hospitalization of the 7 infants who survived varied between 39 and 72 days (mean of 58 days). There was only one death among the eight patients who received the nonoperative treatment. This particular female infant, aged 3 days on admission, had a large exomphalos (Fig. 1), the diameter of which was 11 cm. at the neck. Fourteen days after the nonoperative treatment was started, she developed peritonitis. Following a six-day course of systemic gentamycin, laparatomy was undertaken because an adhesive intestinal obstruction had developed. She died a day after the operation. The second infant in the series who died was born with a ruptured exomphalos sac; death occured few hours after operation. The third infant died at the age of six days. He had a huge exomphalos and intestinal obstruction. Neither operative nor nonoperative treatment was given to this infant.

Necropsy on one of the infants who died revealed an associated congenital heart disease. There was one patient with a large tongue and prominent occiput, macroglossia, exomphalos, and macrosomia, features suggestive of Beckwith's syndrome (Beckwith, *et al.*, 1964). Hypoglycaemia was not found in any of our patients.

Fig. 1. A 3-day old female infant with a large exomphalos measuring 11cms in diameter at the neck. Note also the natural flexed position of the leg which tends to constantly rub the exomphalos sac and may cause the sac to rupture.

Discussion

Although the number of patients in this review is small, there is no doubt that the nonoperative method of treating exomphalos is associated with low mortality. Our results of nonoperative treatment compare favourably with those reported by others (Grob, 1963; Soave, 1963; Firor, 1971). Even where skilled

neonatal paediatric surgical facilities are available a high mortality rate is associated with the operative treatment of large exomphaloses (Firor, 1971). In experienced surgical hands the survival rate among patients with small exomphaloses treated operatively is not better than those treated nonoperatively. In a country like Nigeria where skilled surgical facilities are available only at few centres, even these small exomphaloses should be treated nonoperatively. Since the greatest disadvantage of nonoperative treatment is prolonged hospitalization which creates financial and social problems for the parents, it is suggested that a study be undertaken to assess the effectiveness of this method of treatment on outpatient basis.

Although the nonoperative method sounds simple and uncomplicated, our experience with the present series shows that certain problems may arise from this method. First, physical trauma may cause the rupture of the sac and should this happen operative treatment will be indicated. A common possible cause of such trauma is the constant rubbing of the sac with the infant's thighs. This may occur because of the natural flexed position of the infant's legs as shown in Fig. 1. In an attempt to avoid this complication we have found that using plaster-of-Paris cast to keep the baby's legs extended is very useful.

Secondly, in spite of the antiseptic property of mercurochrome, experience shows that local and superficial infection may occur. When this occurs it is our practice to remove the hardened cap of the eschar after softening it with Eusol or Hibitane (1:2,000) solution. On very rare occasions the superficial infection may extend inwards causing peritonitis. Grob (1963) recommends routine use of antibiotics to prevent such infections. Although gram-negative organisms were isolated from few cases in our series, routine systemic antibiotics were not used. In all cases of local infection, this was controlled by Eusol or Hibitane dressing followed by painting with mercurochrome.

In 1968, Schippan and Wheran reported toxic manifestations of mercurochrome. The features usually start on the second day of treatment and consist of reddening of the skin and urine, sclerema, oliguria and anuria. There was no case of this toxic complication in our series. In view of the possibility of this complication, Zephiran tincture, or 70 percent alcohol or solcoserryl jelly has been suggested as satisfactory alternatives.

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