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SM Journal of Pediatric Surgery

Case Report

Bedside Repair of Ruptured Omphalocele in Newborn: A Case Report

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Article Information

Received date: Oct 29, 2015
Accepted date: Dec 12, 2015
Published date: Jan 25, 2016

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Keywords Ruptured Omphalocele; Cicatrisation; Beckwith-Widemann syndrome

Abstract

Newborn presenting with ruptured omphalocele is an emergency which threatens the life of baby. We are reporting a case of a male newborn baby, born in hospital and had ruptured omphalocele sac during vaginal delivery. After reduction of herniated bowel excess omphalocele sac was excised and remaining sac was closed using absorbable suture material. Patient was kept NBM for 4 days and gradually started on feeds. On further evaluation patient was found to have Beck with –Widemann syndrome. Patient's karyotype was normal. Patient kept on regular follow-up with serial USG-KUB after discharge. To our knowledge, there are only few reported cases of bed-side repair of ruptured omphalocele sac. This case is presented for its simple and effective bed-side management.

Introduction

Due to advances in pediatric anesthesia and resuscitation surgical and overall management of omphalocele has improved in recent years. [1-3] Ruptured omphalocele sac has been managed by using prosthetic material to close the abdominal wall defect. The cost of prosthetic material is an issue in developing countries. Hence an alternative for closure of abdominal wall defect in the form primary closure of omphalocele sac is described here in our case.

Our patient also had phenotypic features of Beckwith-Widemann syndrome. Karyotyping was 46 XY .baby is being followed with serial abdominal sonography.

Case Report

A male newborn baby, 3.2 kg, born in hospital, referred to us for management of ruptured omphalocele sac.

Records revealed that he was born of nonconsanguinous marriage, full term, vaginally delivered and cried immediately after birth. There was no family history of malformation.

On general examination baby was active. His cry, tone was good. Baby had nevus flammus, macroglossia.

On abdominal examination, there was adefect of 5 x 3 cm in abdominal wall. Omphalocelesac was ruptured and there was evisceration of large segment of small bowel. (Figure 1) Umbilical cord was attached to sac on right side of midline. Baby had passed meconium. His hematological investigations and blood gas analysis were normal except blood sugar which was found to be low on two occasions. Records revealed that antenatal USG at 20 weeks was suggestive of umbilical hernia. Another scan at 36 weeks revealed mass lesion in relation to fetal cord insertion site measuring 5.6 x 5.2 cm.There was no evisceration of solid organs, no evidence of fetal ascites or hydrops fetalis. Peristalsis was noted within omphalocele.

Prenatal screening for Down's syndrome was done using NT (Nuchal Translucency), PAPP-A and Beta-hCG which turned out to be low risk. Parents were counseled for lower segment caesarean section but they refused and opted for vaginal delivery.

Operative Management

Patient was examined bedside. The content of omphalocele was small bowel only, no other viscera found. There was no Meckel's diverticulum. We reduced the small bowel inside abdominal cavity and tried primary closure of abdominal muscle, sheath and skin but it was not possible. Hence we excised the excess sac and closed the sac at skin level using Vicryl 3-0 and (Figure 2)... Baby was kept nil by mouth for 4 days. Skin dressing was changed daily. Prophylactic antibiotic therapy was given with Amoxycillin+clavulinic acid for 5 days. Baby passed meconium on 2nd post-op day. Test feeds were started on 4th post-op day. The post-operative period was uneventful. Sac closed at level of skin got cicatrized at umbilicus by 8th post-op day and it completely covered the defect (Figure 3). Full epithelisation developedin6 weeks (Figure 4). Baby was investigated further once stabilized. USG abdomen was normal for kidneys, pancreas and liver. 2-D echo showed

Figure 1: Omphalocelesac was ruptured and there was evisceration of large segment of small bowel.

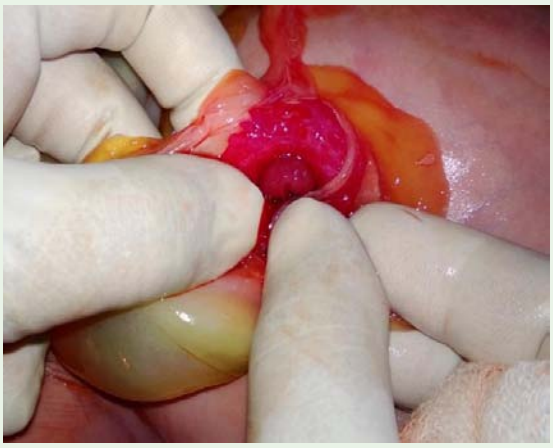

Figure 2: Operative management.

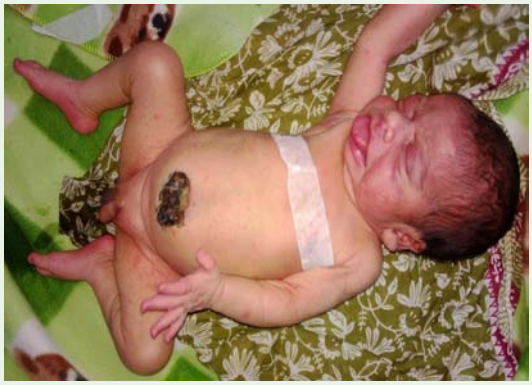

Figure 3: Sac closed at level of skin got cicatrized at umbilicus by 8th post-op day and it completely covered the defect.

Figure 4: Full epithelisation developed in 6 weeks.

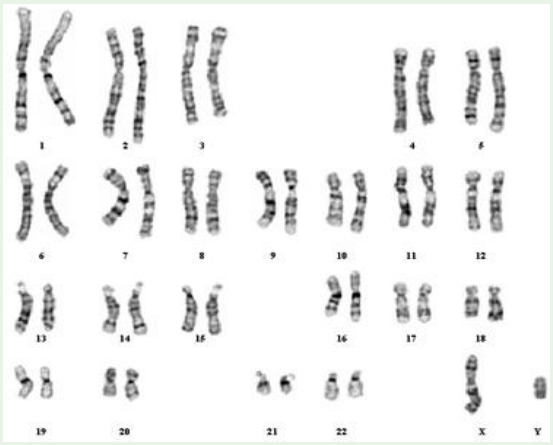

Figure 5: It showed normal male karyotype 46 XY.

4 mm OS ASD with L to R shunts with severe PAH. It was managed conservatively and regular follows up. Since baby had syndromic features like macroglossia, nevus-flammus, ruptured omphalocele, and hypoglycemia karyotyping was done. It showed normal male karyotype 46 XY (Figure 5)

Discussion

Omphalocele repair requires reduction of herniated bowel loops into the abdominal cavity and closure of abdominal wall defect. Reduction of bowel into abdominal cavity causes increased intra-abdominal pressure which may lead to intra-abdominal compartment syndrome. Hence it is necessary to check for vital parameters of baby, for any respiratory distress, cyanosis, low blood pressure. Closure of abdominal wall defect can be accomplished by primary anatomical repair of the defect. If the defect is large, prosthesis is used. [4]. Increase in abdominal pressure causes respiratory and circulatory disorders, intestinal necrosis and infection leading to death [2,5]. Advances in pediatric anesthesia and resuscitation, use of prosthesis has increased post-operative survival of children with omphalocele [6,7]. In developing countries prosthesis are often unavailable or patients can't afford one. Hence alternatives for abdominal wall defect repair should be considered like closure of sac at skin level as we have done in this case. Full epithelisation developed in 6 weeks. If any residual hernia develops, it requires surgical repair later. Rupture of omphalocele sac

can be prevented if prenatal USG diagnosis is done. Prenatal USG diagnosis enables the obstetrician to choose less traumatic mode of delivery. In our case parents insisted for vaginal delivery. Our patient had macroglossia, nevus flammus, ruptured omphalocele, hypoglycemia, features suggestive of Beckwith-Widemann syndrome [8]. It is caused by mutation or deletion of imprinted genes within the chromosome 11p15.5, with normal karyotype. BWS features include macrosomia, macroglossia, visceromegaly, omphalocele, hypoglycemia, unusual linear fissures in the earlobe. Approximately 5-10% of the patients develop Wilms tumour. Hence we are following our patient with 3 monthly USG scan.

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