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DETERMINATION THE EFFICACY OF UMBRELLA REFURBISHING OF GAINT OMAPHALOCELE

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Abstract:

Introduction*: The aim of this study was to analyze the efficacy of umbrella repair of giant omaphalocele. Although many techniques have been described reconstruction of the giant omphalocele, simple, effective and new safe technique.*

Place and Duration: *In the Mew Hospital, Lahore for three years duration from December 2015 to December 2018.*

Materials and methods: *In the study for duration of three years we explore our assessment and research that 11 neonates with giant omphalocele that were treated by a new technique, Umbrella repair. In this new technique near the omphalocele membrane, we released the skin around the omphalocele just near the junction and a purse string suture is placed at the edge of the skin with beads beneath each bite and graded tightening of the suture in order to push the omphalocele toward the abdominal cavity. Finally, we compare the results.*

Results: *Postoperative complications, mortality and morbidity in the umbrella repair group methods were also fewer than conventional methods. Among total eleven patients, weight and mean age at the time of operation were 2150 grams and 2.18 days respectively. Comparing the results between groups, we observed significant less operative time and number of surgeries in neonatal period among patients who were managed by umbrella repair.*

Conclusion: *Refurbishing or umbrella repair ensures a quick and safe method for giant omphalocele management with less morbidity and transience.*

Keywords: *Surgical complications, Umbrella repair, Giant omphalocele.*

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INTRODUCTION:

The most traditional methods of treating mortality giant omphalocele associated with infectious complications, sepsis, respiratory failure, hemodynamic compromise, devotion and disability Above to close the stomach reasons, we present a new technique in this study Called "Umbrella repair "for better management it is hard. Omphalocele is one of the defects of the abdominal wall in which abdominal contents herniate through the defect in to the umbilical cord. The term giant omphalocele is used identify anomphalocele neither repaired by facial nor by flap of the skin. Patient with giant omphalocele in which usually part of the liver protrudes into the sac and worse results are expected more often because of accompanying anomalies. Management of giant omphalocele a difficulty in pediatric surgery and various procedures are recommended which includes reconstructive surgery with skin flaps and grafts, conservative management by antiseptics, stage repair with Silo or using tissue expanders or even prosthetic materials like Gore-tex patch. Given the high frequency long-term or multiple anomalies Staged procedures are risky in these cases.

MATERIALS AND METHODS:

The expected benefits of our new technique: incidence of sepsis and dissociation, prostheses the material is not used and the natural barrier remains inside place. This study was held in the Mew Hospital, Lahore for three year duration from December 2015 to December 2018. All giant cases Omfalocele admitted in Mew Hospital, Lahore from 2015 to 2018 were selected and were offered this new modified method and included in this study after taking informed consents. The informed consent in this study was taken. They were free to choose other methods observed from other colleagues in the same department. The purpose of this technique was to cover the giant omphalocele with the native skin without removing the omphalocele membrane as a natural barrier. Also, short working time, quick postoperative healing and less abdominal complications. These are other positive aspects. Abdominal pressure adjustable during and after work. Skin folds created during the purse suture make the skin more stable and hard, like umbrella spokes. This may facilitate gradually spontaneous organ reduction after operation maintaining the natural lining of viscera in place. We compare all the data contained surgery time, number of operations, after the operation; complications and mortality among patients treated with conventional methods.

TECHNIQUE:

The skin around the omphalocele membrane is unconfined just near the junction with the sac and keeps the omphalocele membrane in place, undermining the skin as thick as possible, just over the fascia, leaving the abdominal wall fascia intact. It is simple, fast and easy to do. Safe skin length separated by 5-6 centimeters. Then a purse string suture is placed at the edge of the skin with 2-0 nylon or Prolene suture with beads beneath each bite to prevent skin necrosis. The last step is gradual tightening of the suture in order to push the omphalocele toward the abdominal cavity, and covering the sac with native skin as much as possible being careful in order to prevent inadvertent increase of intra-abdominal pressure. We pass the Foley at the beginning of the operation and measured the intra-abdominal pressure at the end of operation after instillation of 10 cc normal saline. During the operation and at the time of skin repair we also monitored the intra-abdominal pressure by checking free infusion of intravenous fluid and also by checking respiratory positive pressure during ventilation support. We considered slow intravenous infusion or peak aspiratory pressure more than 25 cm H2O as prone to abdominal compartment syndrome. At the end of operation, all patients were transferred to NICU full paralyzed and under respiratory support with a fixed Foley for monitoring of the post-operative course. Intra-abdominal pressure higher than 20 was considered as abdominal compartment syndrome and demanded for loosening of skin flap Figure 2.

RESULTS:

This method was effective in all cases and planted after a few days. On average, we operated on eleven patients the age at the time of surgery was 2.18 ± 0.87 days and Average weight 2150 ± 450.55 grams. Seven Cases (63.6%) are men and 4 cases (36.4%) woman. The average area of the defect compared to the total area of the abdomen the area was 70.9 ± 8.31%. The most common complication in our study abdominal compartment syndrome in 5 cases (45.5%). Purse string suture was loosened slightly to relieve the abdominal pressure. No complications were noted after the first session of operation and the average operation time was 32.54 ± 11.6 minutes and average number of operations in the neonatal period 1.1 (only one case required a partial restart due to lobe necrosis) Support for postoperative ventilation was maintained for 7.63 ± 8.4 days, the minimum duration of postoperative ventilation was 2 days, and the maximum support for postoperative ventilation was 32 days. Five patients had concomitant malformations and VSD was present in 4 cases (36.4%) and TOF was present in 1 case (9.1%). One

poor rotation was also diagnosed and the second surgery corrects the abdominal hernia in a newborn with a very low birth weight. There were two deaths because of serious heart problems. Mortality Series of umbrella repairs amounted to 27.3%. Finally we compared our data with 15 giant omphalocele cases that were treated by conventional approaches such as conservative treatment, silo closure or other procedures. Table1.

Table 1: Comparison of results between umbrella repair and conventional approach in giant omphalocele

Index	Umbrella repair (n=11)	Conventional repair (n=15)	P Value
Sex (M/F rate)	7.4 (1.75)	8.7 (1.14)	0.726
Age (GA)	2.18±0.87	2.45±1.09	0.352
Weight	2150±450.5	2342±822.6	0.773
Abdominal wall defect %	70.9±8.31%	64.8±11.53%	0.124
Operative time	32.54±11.6	51.07±23.2	<0.05
Number of operations	1.1±0.3	1.62±0.95	<0.05
Ventilation support time	7.63±8.4	9.02±7.2	0.073
Posto perative Complications	45.50%	66.60%	0.249
Mortality	27.30%	33.30%	0.551

The defect was repaired using Marceline mesh in 2 cases, and the original closure was obtained in 4 children. The late complication observed in our observation was the incarceration of the liver in the omphalocele sac. This patient had an esophageal hernia, and during the second surgery we observed a thick ring with hepatic prolapse at the edge of the abdominal wall defect. Pathological studies in the ring sample showed results consistent with epidermal cysts. Until now, secondary closure was performed in 6 patients (at the time of surgery), and the average age of patients in the second procedure was 9 months.

DISCUSSION:

In this study, we decided to create a new method of treating giant omphalocele with a small number of complications. The main goal in treating babies with congenital abdominal wall defects is to reduce internal organs and close defects. Sometimes this may not be possible due to the size of the defect, loss of abdominal area, risk of compartment syndrome, venous return or respiratory failure. On the other hand, related irregularities can prevent surgery. In addition, delayed primary closure with silo or prosthesis material can be complicated due to infection and dissociation that may require removal of the prosthesis. To tackle these common problems, covering the defect is a real challenge. It should be remembered that the priority is to cover exposed internal organs.

The expected benefits of our new pseudo-technique may have less sepsis and detachment, given dentures the unused and natural barrier remains in place, crosses operational time, fast recovery time after surgery and less abdominal syndrome regulated during and after abdominal pressure job. The biggest advantage of this method with natural visceral covering (amniotic membrane) Gradual and controlled skin closure. Skin folds formed during sewing Thanks to these methods, the skin becomes more stable and harder just like a radio with an umbrella and it can facilitate Gradual spontaneous reduction of postoperative organs keep the natural lining of the viscera in place. Gross recommends maximum regional skin covers flexible abdominal wall element: late closure of the fascia into the abdomen expands enough to make a hernia viscera.2 that's why we use leather hats to cover the internal organ, including beads between the bag rope Flap strengthening seams. The postoperative period was compared with literature morbidity and mortality among our patients acceptable. Umbrella repair and conventional approaches both groups were almost equal in terms of demographic characteristics and the size of the defects. However, the differences are not significant, probably due to the small number of cases. Significantly shorter surgery time and number of operations neonatal period, postoperative complications, Incidence and mortality in the umbrella repair group.

Conclusion: This is the method (umbrella) of managing huge omphalocele with acceptable results and low morbidity and mortality.

Figure 1: Umbrella repair of giant omphalocele, different steps of our method.

Figure 2: different steps of secondary abdominal wall repair in a patient with liver incarceration in abdominal wall defect

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