



## Case Report

### ROLE OF ALLOGRAFTS IN THE MANAGEMENT OF MASSIVE APLASIA CUTIS CONGENITA OF SCALP

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**SUMMARY:** A case of Aplasia Cutis Congenita with massive skin and bony defects on the vertex of the skull and the lumbo sacral region is presented. The raw areas which were exposing the dura were treated by repeated application of allograft skin from the second day of life. Healing was achieved in 35 days without any problem. New bone formation with significant reduction of bony defect was noticed when the child was reviewed at 5 years.

#### CASE REPORT

A full term male child presented on the second day of birth with a 8cms x 6.5cms midline skin defect of the skull in the parieto occipital region. The underlying bony defect measured 14cms x 12cms. Thinned out dry dura was seen covering the underlying superior sagittal sinus and brain tissue. A thin rim of pink epithelialised tissue was found around the edges of the defect (Fig 1).

The defect in the lumbo sacral region measured 4cm x 1cm exposing the dura (Fig 2). There were no other congenital anomaly. In order to prevent the drying of the dura, eschar formation, infection and hemorrhage from the superior sagittal sinus, the defect was covered with allograft skin and covered with a povidone iodine impregnated paraffin gauze (Fig 3). They were changed every third day to avoid any rejection response till epithelialisation occurred from edges of the defect.



(Fig-1) Raw area in the scalp

The scalp defect took five weeks to heal, while the defect in the lumbo sacral area took two weeks to heal. Later, acrylic reinforced well padded helmet with Velcro straps was provided to prevent any accidental injury. There was no complication due to the wearing of the helmet. Follow up at the end of the 5 years showed good thick tissue cover over the brain and radiograph showed very encouraging signs of bone growth with significant shrinkage of bony defect. Child's intelligence and neurological status were found to be normal.

#### DISCUSSION

Cutis aplasia was first described in 1767 by Cordon in extremities and later in scalp by Campbell in 1826. There have been reports of associated anomalies like hydrocephalus, meningomyelocele, cleft lip, cleft palate, deformities of cranium and



(Fig-2) Defect in the lumbo sacral region



(Fig-3) Allograft application



(Fig-4) Follow up at 5 years

fingers and cardiac anomalies. Despite many studies, there is no valid theory or good explanation to pinpoint the responsible factor for the causation of this anomaly. As the mortality ranges from 20 to 55 percent, search is still on for an ideal treatment method. Aim of treatment is to prevent infection and haemorrhage from the superior sagittal sinus till the defect gets covered.

Since time immemorial, allografts are known to have various healing enhancing properties. These characteristics were exploited while treating this big defect. Allografts provided good biological cover by preventing dural drying and eschar formation. They also protected the area from bacterial invasion, while epithelium crawled underneath from the edges. A thin rim of pink epithelized tissue on the edges of the defect at birth, is suggestive of intrauterine healing attempt. Bone does grow from the edges and the bony defect shrinks, as time go by. Allografts had to be changed every third day, to prevent any rejection response. Betadine impregnated paraffin gauze had good

antibacterial effect and also helped in maintaining moisture. There was no danger of eschar formation and drying, as the povidone iodine did not come into direct contact with the defect.

This modality of treatment has multiple advantages. It is non invasive, safe, requires no instrumentation and is least costly. Allografts are easily available with all reconstructive surgeons or it can be taken from parents. Allografts do suffer a disadvantage, like leaving a bald patch on the scalp (Fig 4). This bald patch can be excised later in life and defect can be covered either by rotation flaps or by expanded skin. Acrylic reinforced helmet was extremely useful in preventing an accidental injury, till the formation of thick tissue cover. It is also well tolerated by a child.

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