INTRODUCTION

Corneal transplant is the surgical procedure in which an abnormal full thickness corneal tissue is removed from a host and substituted with full thickness donor corneal tissue (Buxton et al., 1999).

The first, full thickness, successful corneal transplant was performed in 1905 by Dr. Edward Zirm in severe bilateral corneal burn (Zirm, 1906). In the past, corneal transplant in pediatrics was considered contraindicated; because of technical challenges in pediatric anterior segment surgery created by low scleral rigidity and forward displacement of the lens- iris diaphragm and the potential for post surgical anterior segment inflammation (Mc Clellan et al.,2003). In 1990 there was a dramatic increase in the rate of pediatric corneal grafting procedures and many factors are responsible for this dramatic increase in corneal transplants, not the least of which are major scientific and technological innovation and the advent of surgical microscopes, non reactive 10-0 suture material, microsurgical techniques, and improved preoperative and postoperative management, including the introduction of corticosteroid and other immunosuppressant agents such as cyclosporine A (Buxton et al., 1999)

Visual deprivation during the early months of life as a result of congenital corneal opacities can result in long term changes to the central nervous system and this may result in profound and uncorrectable loss of vision that can impact negatively on a child development. To prevent these potentially devastating changes, penetrating Keratoplasty may be necessary. (Richard et al., 2001). Functionally, the most important indication for corneal grafting in pediatrics is the existence or the threat of amblyopia. The indication is most urgent in the first two years of life. In

these children optical Keratoplasty must be considered before the age of 3 years (Picetti and Fine, 1965).

Other indication for corneal grafting in pediatrics include:-

1- Tectonic; when restoration of altered corneal structure is a prime goal; such in cases of Keratomalacia, perforated corneal ulcers and alkaline injury.
2- Therapeutic; when tissue substitution for refractory corneal disease is the main purpose.
3- Cosmetic; replacement without hope of visual improvement (Stanley, 1988).

Corneal grafting has a significantly lower success rate in pediatrics as compared with adults, with success rate being lowest for cases of congenital corneal opacity (Comer et al., 2001). Some studies have shown a relatively guarded prognosis for vision in pediatric corneal grafting; graft clarity at 1 year ranges between 60% and 80% and 2 years average around 65%. Vitrectomy, lensectomy , regrafts, and postoperative complications are associated with significantly poor allograft survival(Stulting et al.,1984 and Dana etal.,1995). The poor graft survival could be correlated with those younger than 5 years and the performance of anterior vitrectomy(Aasuri et al.,2000).

Small graft sizes, meticulous patient selection before surgery, excluding those with severe dry eyes and active inflammation, proper management of pre- and postoperative increased intraocular tension, careful planning of surgical techniques and appropriate follow up care may all enhance the chances of a successful outcome (Buxton et al., 1999 and Wei-Li et al., 2004). This essay highlights the indication, contraindication, surgical techniques, pre and postoperative care, complications and the outcome of corneal grafting in pediatrics.