Our History of Expertise

Under the direction of Dr. Michael Harrison, the Fetal Treatment Center was the first institution to develop fetal surgery techniques. The first fetal surgery in the world was performed at UCSF over 3 decades ago. We have more experience with fetal surgery and endoscopic fetal intervention than any other institution in the world.

Video History of the Fetal Treatment Center


Fetal Firsts

1980 Techniques for open fetal surgery first developed in animal models at UCSF


1981 First open fetal surgery performed at UCSF. A vescicostomy was placed in a fetus with a urinary obstruction


1981 First successful sonographically guided placement of a fetal urinary catheter (Harrison vesicoamniotic shunt) for bladder outlet obstruction.


1984 Uterine stapling device for fetal surgery was designed and first used at UCSF

[Adzick NS, Harrison MR, Bottles K. Use of uterine stapling device for experimental fetal surgery and cesarean section. SURG FORUM 1985;36:479-481]
1984 First successful resection of fetal congenital cystic adenomatoid malformation of the lung (CCAM).


1986 Transplantation of fetal hematopoietic stem cells in utero first demonstrated in animal models at UCSF.


1989 First successful open fetal surgery for congenital diaphragmatic hernia.


1991 Radiotelemitters were first developed and used to monitor the fetus' condition during and after fetal surgery.

[Jennings RJ, Adzick NS, Longaker MT, Harrison MR Radiotelemetric fetal monitoring during and after open fetal surgery. SURG OBSTET & GYNECOL 176:59-64, 1993]

1992 First resection of a fetal sacrococcygeal teratoma.


1993 Congenital High Airway Obstruction (CHAOS) Syndrome first described (and named) at UCSF.


1994 First NIH sponsored clinical trial for fetal surgery was done at UCSF: open repair of congenital diaphragmatic hernia.


1994 Repair of fetal myelomeningocele (spina bifida) first demonstrated in animal models.


1995 EXIT (Ex utero Intrapartum Treatment) procedure for fetal airway obstruction first
developed (and named) at UCSF.


1996 First successful fetoscopic temporary tracheal occlusion for CDH: The Fetendo Clip procedure

[Harrison, MR, Mychaliska GB, Albanese, CT, et al. Correction of congenital diaphragmatic hernia \[5\] in Utero IX: Fetuses with poor prognosis (liver herniation and low lung-to-head ratio can be saved by fetoscopic temporary tracheal occlusion. J PEDIATR SURG 33 (7): 1-8, 1998]

1996 First successful resection for fetal sacrococcygeal teratoma (SCT)


1998 First successful resuscitation of a fetus during open fetal surgery


1998 First successful fetoscopic laser treatment of a single A-V communication in twin-twin transfusion syndrome


1999 Fetoscopic repair of fetal myelomeningocele (spina bifida) introduced.


2000 First NIH sponsored randomized controlled trial for fetal surgery was done at UCSF: Temporary tracheal occlusion for severe congenital diaphragmatic hernia--The Fetendo Balloon Procedure


2001 First successful radiofrequency ablation (RFA) procedure for anomalous twins.


2003 The Management of Myelomeningocele Study? or MOMS
A randomized clinical trial comparing fetal surgical repair of myelomeningocele (spina bifida) to standard postnatal repair was first developed at UCSF. Later incorporated into a three-center national trial, 'The Management of Myelomeningocele Study?' or MOMS. See MOMS website at www.spinabifidamoms.com [12] for details of this ongoing study.