RESTORING DIGNITY: A REVIEW OF OBSTETRIC FISTULA

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I have nothing to disclose. As a resident I am cheap labor available for hire. I have no financial involvement in this topic or organizations represented.
OBSTETRIC FISTULA

1. Obstetric fistula definition
2. Epidemiology
3. Diagnosis
4. Treatment
5. Campaign to end fistula
Each year 50,000-100,000 women are affected by obstetric fistula.

Development of fistula is directly linked to one of the leading causes of maternal mortality: obstructed labor.

It is estimated that more than 2 million women live with untreated obstetric fistula in Asia and sub-Saharan Africa.

WHO press release, March 2010
Prolonged compression of maternal soft tissues, during labor, between the fetal head and maternal pelvis causing ischemia, subsequent necrosis and sloughing resulting in a fistula.
Obstetric fistula

Obstructed labor occurs in 5% of all live births

Accounts for 8% of maternal mortality and morbidity
RISK FACTORS

- Absent or untrained birth attendants
- Reduced pelvic dimensions due to early child-bearing, chronic disease, malnutrition and rickets
- Uncorrected inefficient uterine activity
- Malpresentations
- Hydrocephalus
- Introital stenosis from female circumcision
Risk Factors

After hours of obstructed labor by the time women reach a hospital the fetus is often dead requiring surgical removal of the fetus. This further increases the risk of fistula with the use of:

- Forceps
- Instruments used to dismember and deliver stillborn infants
- Surgical abortion
- Symphysiotomy
OBSTETRIC FISTULA

- In the US with adequate access to healthcare, better nutrition obstetric fistula occurs in 2% of obstructed labors.

- More commonly, fistulas in the US are seen as a result of trauma to the bladder or posterior vaginal wall, perineum, anus and rectum during difficult gynecologic procedures, third or fourth degree laceration repairs, Crohn’s disease, UC, cancer, radiation therapy and diverticulitis.
THE FISTULA PATIENT

- Short (<150cm)
- Small (44kg)
- Married early (15.5 yo)
- Now Divorced 49%
- Separated 22%
- Uneducated 78%
- Poor/Rural (>95%)
- Fistula as a G1 46%
- 824/899 fetal deaths
- 75/899 live births
- 14 died in first month
- >50% endured fistula for 1-9 years before seeking treatment
- Avg size 3.5cm

American Journal of Obstetrics and Gynecology 2004; 190:1011-1019
OBSTETRIC FISTULA
Most commonly obstetric fistula occurs in the upper third of the vagina and occasionally results in total amputation of the proximal urethra.
UROGENITAL FISTULA

- Type I: Do not involve the urethral closing mechanism
- Type II: Do involve the urethral closing mechanism
  - A) Those without (sub)total urethral involvement
  - B) Those with (sub)total urethral involvement
    - a) Without circumferential defect
    - b) With circumferential defect
- Type III: Involved the ureter
OBSTETRIC FISTULA

- Symptoms:
  - Usually painless
  - Uncontrolled leakage of urine from the vagina: continuous vs positional
  - Uncontrolled flatus or feces from vagina
  - Foul smelling vaginal discharge
Diagnosis:

- On vaginal exam one can see a small, red area of granulation tissue or an actual hole.
- For smaller areas one can place methylene blue or sterile milk into the bladder or rectum and use a colposcope to better visualize the area of concern.
Moir Test

- Instill methylene blue into bladder and place cotton swabs or a tampon in the vagina
- Have the patient ambulate
- If the cotton is blue indicates vesicovaginal fistula, if clear or if patient took pyridium and it is orange indicates ureterovaginal fistula
Four phases of healing: coagulation, inflammation, fibroplasia, and remodeling.

In the fibroplastic phase collagen is laid down reaching its peak on the seventh day after injury and continues for three weeks.

Healing is most vulnerable to hypoxia, ischemia, malnutrition, radiation and chemo so this is when most fistulas present.
For vesicovaginal and rectovaginal fistula, timing of treatment is debatable. Bottom line is if seen at time of gynecologic surgery or obstetric delivery repair at that time. If delayed diagnosis allows for inflammation, infection, and tissue necrosis to recover.

In ureteral fistula, the rate of healing can be detrimental to the ability to repair the defect.
TIMING OF TREATMENT

- If the ureter is allowed to fibrose and unable to develop smooth muscle function peristalsis may not return favoring a more immediate repair with the exception of an active pelvic infection and if the lesion is less than 5mm.
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TREATMENT

- James Marion Simms (1813-1883)-“father of American Gynecology”

- Anarcha, Betsy and Lucy, Alabama 1845

- No anesthesia, Anarcha was operated on 30 times
SURGERY IN ADDIS ABABA
Stay sutures or clamps are placed to help expose the fistula.

A circumferential incision is made around the fistula and the tract and scarred edges are excised completely until fresh vascular tissue is identified.

The initial layer is closed with interrupted 4-0 delayed absorbable sutures in the extramucosal portion of the bladder edge or anterior rectal wall.
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TREATMENT

- For suburethral or juxtaurethral vesicovaginal fistula is repaired this way cure rates are 95% successful.
TREATMENT

- For larger defects (>4cm) and with more scarring or total urethral transection alternative sources can be used as graft to reinforce the area.
  - Martius flap
  - Gracilis muscle
  - Gluteus muscle or peritoneum
MARTIUS FLAP
Martius Flap

Fat pad graft drawn through the tunnel beneath the labia minora and vaginal mucosa.

Pedicle with blood supply intact.
MARTIUS FLAP
TREATMENT

- For intra-abdominal closure omental tissue can be placed between suture lines to form a neovascular pedicle.

- More significant rectovaginal fistulas may require a diverting colostomy with repair of fistula then reanastamosis. This is mostly seen in individuals with IBD and diverticulitis.
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TREATMENT

- Without placement of the graft you risk the patient developing significant vaginal stenosis or a tight band in the vagina.

- However, 10-20% of women with graft placement develop urinary incontinence.
If there is total urethral loss the surgeon must create a neourethra.

A neourethra is created by utilizing an anterior bladder wall flap to make a urethra.

Most of these patients require a midurethral sling to be placed due to persistent urinary incontinence but risk of erosion is significant.
At completion of the first layer of fistula repair methylene blue solution should be placed to assure a water tight closure.
If less than 0.5 cm one can cauterize the fistula tract through a cystoscope then leave a catheter in for two-four weeks but there is little data to support this technique.
Post-operatively vaginal packing can be placed to absorb any seepage from the wound during the first 18-24 hours.
FOLLOW-UP

- Catheter should be left in place for two to four weeks and patients must stay hydrated.
- A cystogram can be done one week post op to confirm the progress of healing.
- Clear liquid diet 24-72 hours post op, low residue diet x 3-4 weeks, and a stool softener for one month with milk of magnesia if constipated.
Follow-up

- No intercourse for > 3 months
- Recommend cesarean for next delivery and going to the hospital at the earliest sign of labor


**OBSTRUCTED LABOR INJURY COMPLEX**

### Urological Injury
- Vesicovaginal fistula
- Urethrovaginal fistula
- Ureterovaginal fistula
- Complex combined fistulas
- Urethral damage, including complete urethral destruction
- Bladder stones
- Stress incontinence
- Marked loss of bladder tissue from extensive pressure necrosis

### Gynecologic Injury
- Secondary hydroureteronephrosis
- Chronic pyelonephritis
- Renal failure
- Amenorrhea
- Vaginal Stenosis
- Cervical injury, including complete cervical destruction
- Secondary PID
- Secondary Infertility
### Obstructed Labor Injury Complex

#### GI Injury
- Rectovaginal fistula formation
- Rectal stenosis or complete rectal atresia
- Anal sphincter incompetence

#### MSK Injury
- Osteitis pubis

#### Dermatologic
- Chronic excoriation of the skin from maceration by urine or feces

#### Neurologic
- Foot drop from lumbosacral or common peroneal nerve injury
- Complex neuropathic bladder dysfunction

#### Fetal
- Fetal case fatality of 95%

#### Social Injury
- Social isolation
- Divorce
- Worsening poverty
- Malnutrition
- Depression (suicide)
- Premature death
Psychosocial

- Worse than the physical injury
- Divorce and abandonment
- Cast out by their families
- Social outcasts
- Many treated as having a punishment from God for sexual misconduct
- Depression, anxiety, suicide
The biggest frustration?

- It’s preventable!
  - Delaying age of first pregnancy
  - Cessation of harmful traditional practices
  - Timely access to healthcare
Part of the United Nations Populations Fund (UNFPA) goals written in 2003:

- Universal access to reproductive health services by 2015
- Universal primary education and closing the gender gap in education by 2015
- Reducing maternal mortality by 75% by 2015
- Reducing infant mortality
- Increasing life expectancy
- Reducing HIV infection rates
RESTORING DIGNITY

- Surgery to repair fistula
  - $$$$  
  - Few hospitals with even fewer trained surgeons
- Rehabilitation
  - Physical therapy
  - Psych services, Employment training, reintegrating into society
- Outreach
$5 provides food for a recovering fistula patient

$10 covers transportation to a hospital for a woman seeking care

$60 pays for a cesarean section to prevent fistula

$80 equips a hospital with a complete set of surgical instruments required for fistula repair

$300 covers one woman’s fistula surgery, postop care and follow-up support
RESTORING DIGNITY

- Campaign is now working in 49 countries in Africa, Asia and the Arab region focusing on prevention, treatment and rehabilitation
- Over 16,000 women have been treated with the assistance of UNFPA supported programs
A Walk to Beautiful. NOVA made for PBS. DVD. 2008


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Campaign to End Fistula Printed Materials. www.endfistula.org

CAMPAIGN TO END FISTULA

- Addis Ababa Fistula Hospital
- African Medical & Research Foundation (AMREF)
- American College of Nurse-Midwives (ACNM)
- Babbar Ruga Fistula Hospital
- Bangladesh Medical Association (BMA)
- Bill and Melinda Gates Institute for Population and Reproductive Health
- Centers for Disease Control (CDC)
- Columbia University's Averting Maternal Death and Disability (AMDD) Program
- EngenderHealth
- Equilibres & Populations
- Family Care International
- Fistula Foundation
- Fistula Foundation Nigeria
- Geneva Foundation for Medical Education and Research (GFMER)
- Healing Hands of Joy
- Health and Development International
- Human Rights Watch
- IFORD
- International Confederation of Midwives (ICM)
- International Federation of Gynecology and Obstetrics (FIGO)
- International Urogynecology Association (IUGA)
- International Society of Fistula Surgeons (ISOFS)
- Johnson & Johnson
- Johns Hopkins Bloomberg School of Public Health
- London School of Hygiene and Tropical Medicine
- Medecins Sans Frontieres (MSF)
- Obstetrical and Gynaecological Society of Bangladesh (OGSB)
- One by One Project
- Operation Obstetric Fistula
- Pan African Urology Surgeon's Association (PAUSA)
- Population Media Center
- Psychology Beyond Borders
- RPMM
- South East Fistula Center
- Uganda Child Birth Injury Trust
- United States Agency for International Development (USAID)
- University of Aberdeen
- UZ Leuven
- White Ribbon Alliance
- Women's Dignity Project
- Women's Hope International (WHI)
- Women and Health Alliance International (WAHA)
- World Health Organization (WHO)
- Worldwide Fistula Fund
WEBSITES

- www.endfistula.org - for more information and to donate money

- www.who.org - for statistics on maternal morbidity and mortality