Endoscopic Retrograde Cholangiopancreatography

Does it have a place in East Africa

E.O. Ogutu

Physicians Conference, Kisumu

26th March 2011
History

- **1st.** Reported in 1968 (McCune)
  
  Soon accepted as a diagnostic tool.

- Endoscopic sphincterotomy introduced 1974 (Kawai & Classen, separately).
  
  This changed the role of ERCP from diagnostic to Therapeutic.
What is ERCP
What is expected in an ERCP set up.

1) Fluoroscopy
2) Side viewing duodenoscope.
3) ERCP accessories
4) Patient monitoring set up
5) Resuscitation set up
6) Oxygen & Drugs
7) Staff
Personnel

- Dr. doing procedure (ERCP).
- Anesthetist OR Anesthetic Nurse
- Nursing Staff (2) & Nursing Technicians (2)
- Radiographer
- Rarely radiologist with combined procedure
- In ideal situation a cytologist.
What is the minimum requirement.

1) There must be an indication
2) Good clinical assessment of the patient
3) Evaluation
   U/S
   C/T
   MRI / MRCP
   EUS
   Coagulation profile (PTI & Plat.)
   LFTS, U/E & TBC
   +/- CA-19-9, Alfa-feto protein
4) Informed Consent
Drugs

- Prophylactic antibiotics if indicated
  - e.g.: Valvular heart disease
  - Ductal leak
  - Biliary obstruction
  - Pancreatic pseudocyst

- Sadation ---Dormicum
- Pethedine
- Promethazine
- Propofol
- Buscopan OR glucagon
General Anesthesia

Used when there is indication

e.g.

- Children
- High risk patients
- Complicated prolonged procedures
Indications

**Biliary tract disease**

1) **Choledocholithiasis**
   May present with:-
   a) Biliary colic
   b) Obstructive jaundice
   c) Cholangitis
   d) Pancreatitis

**NOTE:** Do urgent ERCP in Cholangitis & gallstone pancreatitis

**Intervention**

*Sphincterotomy & stone extraction*
Indications

2. Biliary stricture

Benign:
   - Post cholecystectomy
   - Post liver transplant
   - Trauma
   - Post Inflammatory – Chronic pancreatitis
     - PSC
     - Associated with stone disease

* Intervention---DILATE & STENT-plastic
  - fully covered metal stent
Biliary stricture

Malignant

**Intervention**

1. Do - Bx.
   - Brushings
   - FNA

Yield is about 60%

2. Dilate & stent (plastic / metal)
Indications

3. Bile leak

*Usually from cystic duct stump, following lap. Chole.*

**Intervention**

Sphincterotomy &
Stent placement (6/52)
Success 80-100%
Indications

4. Cholangitis

Usually there is an underlying obstruction interfering with the bile flow

e.g.. Stone
Blocked stent
striction +/-, undrained contrast

**Intervention:**-  Take fluid for C/S
Provide drainage- NBD, Stent
Antibiotics
Indications

Others:

- Sphincter of Oddi Dysfunction
- Unexplained abnormal LFTs (cholestatic)
Indication-
PACREATIC DISEASES

1. Acute Recurrent Pancreatitis
   - Microlithiasis
   - Pancreas Divisum
   - Sphincter of oddi Dysfunction

2. Chronic Pancreatitis
   - Stricture - Dilate
   - Stone - remove
     - OR ESWL then remove
Pancreatic Disease

3. Pancreatic pseudocyst

- Gastrocystostomy
- Duodenocystostomy
- Transpapillary drainage
  (If there is duct leakage)
  +
  STENT
Indications - PD

4. Pancreatic Ascites
   Stent the duct

5. Pancreatic cancer
   Provide drainage
Indications - PD

5. Ampullary adenoma

Snare Ampullectomy
If non invasive disease

- EUS & MRI are good evaluation tests.
ERCP - Complications

Overall - 5-10%\textsuperscript{1,2,3},

- Bleeding
- Acute Pancreatitis
- Perforation
- Sepsis
- Related to :- Anaesthetic drugs

2) Deans GT, GUT 1997;41:545-8
CASE PRESENTATION

Case (1)

NN - 78yrs old

Diabetic
Presents with: - Jaundice & marked pruritus
Weight loss

CT scan - Dilated Biliary ducts & PD
- Mass head of pancreas
- CA-19-9 >1000 u/ml
Case (1)

ERCP 29-08-07

Selective canulation done
  Site of obstruction identified
  Brushings taken for cytology
  Bx of lesion for histology

  Stricture balloon dilated 6mm balloon

Metal stent put in place
  Good drainage
Case (1) – Showing stent in place
**Case (1)**

**ERCP 29-08-07**

<table>
<thead>
<tr>
<th>LFTS</th>
<th>29/08/07</th>
<th>28/09/07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Bil.</td>
<td>431.7µmol/l</td>
<td>36.3µmol/l</td>
</tr>
<tr>
<td>Direct Bil.</td>
<td>192.97</td>
<td>21.4</td>
</tr>
<tr>
<td>Alk. Phos.</td>
<td>303u/l</td>
<td>158 u/l</td>
</tr>
<tr>
<td>GGT</td>
<td>102.9 u/l</td>
<td>69 u/l</td>
</tr>
<tr>
<td>ALT</td>
<td>76.1 u/l</td>
<td>53 u/l</td>
</tr>
<tr>
<td>Pruritus</td>
<td>++++</td>
<td>0</td>
</tr>
<tr>
<td>Appetite</td>
<td>0</td>
<td>Good</td>
</tr>
<tr>
<td>General well being</td>
<td>poor</td>
<td>Satisfactory</td>
</tr>
</tbody>
</table>
Case (2)

MM - 52yrs: Male

One week later – Developed features of :-
    Distended abdomen
    Peritonitis
    Shock

Admitted ICU
Prof Ogutu consulted- 20/05/07
Case (2)

21/05/07  ERCP

Findings:-
- Large bile leak at cystic duct stump area
- Two stones in the CBD

Intervention
- Bile aspirated for C/S---- Klebsiella Pneumonia
- Sphincteretomy done
- The stones were extracted
- 9cm 10fr. Plastic stent put in place
Case (2) Slide showing bile leak
Case (2)

Other intervention

- Free fluid in peritoneal cavity drained, percutaneously under U/S

- Appropriate antibiotics given
  

  Put on Cefuroxime & Amik
Immediate Outcome

Patient discharged from hospital within 7 days of doing ERCP in perfect condition.
Case (2)

Outcome

- Stent removed after 2 months,
- No bile leak
- No free peritoneal fluid
- Patient fully recovered
Case 3:

HI: 59yr.old male(pilot):
Presented to surgeon with obstructive jaundice in Jan. 2009:

Evaluation revealed:
  Cholelithiasis & bile duct stricture:

Surgical intervention:
  Cholecystectomy done & repair of bile duct attempted (resection & end to end anastomosis)
Case 3

- **Surgery Outcome**
  - Bile leak
  - Stricture still persists

- **Patient still in hospital by week 6:**
  - Distended abdomen, from bile leak

- **Planed transfer to INDIA,**
  
  *Patient refuses & requests for a 2\textsuperscript{nd} opinion*
Case 3

5/03/2010

Prof. Ogutu consulted

09/03/2010

ERCP Done

Findings:

- *Bile leakage at the CHD*
- *Stricture at the CHD*
- *CBD stones*
What was done at ERCP

09/03/10 (Intervention 1): T-Tube removed

Measures to correct leakage:

- Sphincterotomy
  To reduce the back pressure on leaking duct.

- Initial stenting to promote healing:
  12cm, 10fr. plastic stent was deployed.
Initial outcome of 1st. intervention

14/3/10
- Porto vac removed as no more bile was draining
- Abdomen flat, no free fluid.
- No fever
- Jaundice clearing

15/03/10

Patient in high spirits & discharged home
Case 3: HI

21/05/2009 (Intervention 2)

2nd. ERCP

- No leakage demonstrated
- Large stones removed from duct.
- Stent exchanged
- **Stricture not dilated for fear of breaking the leakage seal**
Outcome of 1\textsuperscript{st} 2 interventions

Resumed full work(International flights) from 1/6/10
01/09/09

3rd. ERCP (3rd. Intervention)

- No leakage
- Stricture at CHD dilated with 6mm balloon
- 2, 10fr.12cm plastic stents placed
Case 3 H1

07/12/09 (Final intervention)

- Duct dilated further: 8mm balloon dilator
- 3, 10fr. Plastic stents placed (two, 12cm; one, 9cm)
Final result of HI

15/2/10

- No bile leakage
- Stones all out
- Stricture fully stretched
- ALL stents out
- Patient working
Latest clinic review

10/11/2010

Patient in perfect condition

LFTs

A.P  106 u/l
T.bil 16.8µmol/l
AST  26 u/l
ALT  34 u/l
GGT  355 u/l

TBC  Normal
Summary/ Conclusion on HI:

- **ERCP achieved the goal, where surgery had difficulties**

- **We saved the patient the inconvenience of going for treatment in a foreign country (INDIA)**
Case 4 ZI

ZI: 3yr old baby.

- Sept.2010 :
  Admitted with severe abdominal pain in one of the major Hospitals in Nairobi

- Evaluation revealed features of severe acute pancreatitis
  - Amylase & lipase > 3,000 iu/l
  - CT scan AP
Baby ZI

- Patient remained in pain for 3 weeks as cause of AP was not clear.

- Paediatric Gastroenterologist consulted

- MRI/MRCP done
  - AP
  - Stones in distal bile duct.
05/10/2010

- Prof. Ogutu consulted

- ERCP planned for 06/10/2010,

- Patient to be taken to The Nairobi Hospital for the procedure
Baby ZI

ERCP: 06/10/2010,

- Under G/A
- Stones identified
- Sphincterotomy done
- Stones removed by basket & balloon
Photo showing papilla being canulated & Sphincterotomy being done on the 3yr.old
Photo showing stones being extracted:
Baby ZI

- ERCP successful.
- No complication
- Baby transferred back to 10 Hospital same day.
Baby ZI

08/10/2010

- Amylase 250 iu/L
- No pain
- Playing
- Started on oral feeds

09/10/10: Pt. Discharge home
Case 5

KTW: 30yr. Old lady.

Case of Pancreatic Pseudocyst, 2nd. To AP:

Reason for referral:
- Vomiting
- Painful distended abdomen

Referred by fellow gastroenterologist for endoscopic drainage
Case 5- Pancreatic Pseudocyst.

- Endoscopic drainage was done on 23/10/07
- Duodenocystostomy done:
  - Access made by triple lumen needle knife through a bulging part
  - Guide wire was passed
  - Balloon (6mm) used to dilate the access, route
  - A double 10fr. pigtail stent was deployed
Top 2 photos showing gastric bulge from pseudocyst.
Top 2: Duodenal bulge from pseudocyst: Guide wire introduced into Pseudocyst through Duodenal bulge. Leakage of cyst content noted.
Top 2: Balloon dilation of pseudocyst thro. duodenal bulge. Bottom 2: Cyst content leakage.
Bottom left: Pigtail stent being introduced: Top 2: Pigtail stent in place.
Endoscopic Ultrasound: 8 months after cyst drainage: No residual cyst in the pancreas.
8 months after drainage: Abdominal ultrasound sowing pancreas without any residual cyst. However it is atrophic.
ERCP- Overall outcome

- About 80-110 cases/yr.
- Equipments & accessories are available
- No procedure related mortality so far
- Post ERCP pancreatitis is our commonest procedure related complication (3%).
- 3 failures in the last 12 months.
Does ERCP have a place in E.Africa.

- YES IT DOES
- Indications are available
- Expertice are available
END

THANK YOU