LAPAROSCOPIC MANAGEMENT OF ECTOPIC PREGNANCY

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• DISCLOSURES
• None
OBJECTIVES

- Briefly review data on surgical vs. medical management of ectopic pregnancy
- Learn surgical techniques to perform salpingostomy and salpingectomy and management of cornual/interstitial pregnancy
- Review data supporting laparoscopic management of ectopic pregnancy in all location of ectopic pregnancy

FOLLOW YOUR PLAN
Randomized trials of conservative surgery versus MTX treatment for ectopic pregnancy (evidence I)

- Comparable rate of tubal preservation in MTX group (90%) and in the salpingostomy group (92%; odds ratio 5.0.98; 95% confidence interval, 0.87–1.1)
- AND Comparable tubal patency in the MTX (55%) and salpingostomy groups (59%; odds ratio 5.0.93; 95% confidence interval, 0.64–1.4)  
- Comparable success rate between the MTX group (88.2%) and conservative surgery (95.9%) Fernandez et al, Hum Reprod. 1998
- Comparable success rates after MTX (94.7%) and after salpingostomy (91.4%)
  Persistent ectopic pregnancy in 15.6% of patients in the MTX group Saraj et al, Obstet Gynecol.1998
- Success rate in the surgery group (93%) was higher than in the MTX group (65%; 95% confidence interval, 10%–47%; p , .01). Sowter et al, BJOG.2001

Diagnostic Pearls

- 50% of patients have no risk factors
- Yolk sac at 5 weeks; Pole at 5.5 weeks
- Should see sac in uterus if quant > 2000
- Look at the sonogram, not the report

Oron JMIG 2013
Pseudo Sac

Pseudo sac in patient 5 weeks after LMP with ectopic pregnancy. Sagittal transvaginal view of the uterus shows fluid with debris in the endometrial cavity.
Levine, Radiology, 2007

Treatment Options

- **Expectant Management**
  - Early detection, declining hCG, no sx – about 70% resolution (although low and declining levels may still lead to tubal rupture... Tulandi Fert Steril 1991;56:786-87)

- **Medical Management** – various mtx regimens

- **Surgical Management** – Salpingostomy or salpingectomy??

  *Mol et al. Human Reproduction Update 2008*
Methotrexate Management

- Simple, standardized protocols used
  - 65-95% success
- Rare mortality and morbidity, but reported
- Some patients are not candidates

Kovacs, Acta Obstet Gyn Scan. 2009
Kelly et al, Ob &Gyn 2006

Predictors of Failure of MTX

- N=58 patients diagnosed with ectopic were treated with a single dose of MTX
- 15% failure, 15% required second dose
- HCG>3000, day 3 HCG>3500
- Presence of a yolk sac – 88% fail² (N=62)

Trends in Treatment 2002-07

- Medical Rx increased from 11% to 35%
- Laparotomy only - 25% to 23.8%
- Laparoscopy to laparotomy - 10%
- Laparoscopy only - 65%
- Failed laparoscopy - 5%
- Failed medical treatment - 15%

Advantages to Laparoscopic Treatment?

- Randomized MTX vs. salpingostomy
  - N= 106
  - Equal outcomes - success rate, complication rate, subsequent fertility
  - Equally cost effective when managed optimally

Surgery more favorable outcomes?

• N= 50 patients randomized to receive MTX vs. salpingostomy
  • 65% vs. 93% success
  • 15% MTX will get surgery
  • 7% persistent ectopic after surgery
  • Concluded that salpingostomy was more effective

Sowter, et. al., BJOG 2001 Feb;108(2);192-203

Predicting success with Salpingostomy

• N=3196 population-based study from registry
• 6.6% failure rate of 1306 cases of salpingostomy
• Antimesenteric border
• Make a big enough incision
• Fine tipped monopolar cautery
• Suction/irrigation and blunt forceps to remove
• hCG of > 1,960 IU/L increases rate of failure to 8.6% vs 5.1% if < 1,960

Rabischong, et.al. Ob & Gyn 2010
Persistent Ectopic after Salpingostomy

• 4-15% risk have been reported
• 15% recurrent ectopic pregnancy
• hCG at 7 days post op should be 5% of pre op value
• May need dose of MTX
  • ORON et al, JMIG, 3013

Surgical Considerations

• Patient’s history and desire for fertility must be known
• Hemodynamic stability may be an issue
• Ability to perform:
  • Management of hemoperitoneum
  • Salpingostomy
  • Salpingectomy
  • Extraction of specimen
  • All ectopic pregnancies – where is the ectopic?
Laparoscopy is safe with Hemoperitoneum

• N = 505, 124 with hemo> 500cc, 67 unstable
• Prospective cohort university hospital
• 0% conversion with experienced operators
• More transfusions and shorter stays for the scope group
• Concluded that “laparoscopy as the mainstay method in management of hemodynamically unstable patients with ectopic pregnancy”

Odejinmi, et al J Minim Invas Gyn 2011

Management of Hemoperitoneum
Salpingostomy Methods

Salpingectomy Methods
Methods of Extraction

Cornual Ectopic

- Multiple reports of Cornual ectopic pregnancy managed laparoscopically... Even SILS
- Advances in instrumentation allow laparoscopic approach to be safer
- 52 cases of cornual – ONE converted to open

Ng et al, Fert Steril 2009 Aug;92(2):448-52
Treatment of Interstitial Pregnancy by Laparoscopic Cornual Resection

Antonio MacKenna, MD, Emilio Fernandez, MD and Carlos Fernandez, MD

Journal of Minimally Invasive Gynecology
Volume 20, Issue 4, Pages 406-407 (July 2013)
DOI: 10.1016/j.jmig.2013.01.002

OVARIAN ECTOPIC
Cesarean Scar Ectopic Pregnancy: Laparoscopic Resection and Total Scar Dehiscence Repair
Sara Mahgoub, MD, Victor Gabriele, MD, Emilie Faller, MD, Bruno Langer, MD, Arnaud Wattiez, MD, Lise Lecointre, MD, Cherif Akladios, MD, PhD
Journal of Minimally Invasive Gynecology
Volume 25, Issue 2, Pages 297-298 (February 2018)
DOI: 10.1016/j.jmig.2017.01.022

Broad Ligament Ectopic Pregnancy after Bilateral Tubal Ligation
Yonghee K. Cho, MD, Susan Henning, MS, Gerald Harkins, MD
Journal of Minimally Invasive Gynecology
Volume 25, Issue 2, Pages 314-315 (February 2018)
DOI: 10.1016/j.jmig.2017.02.024
CONCLUSIONS

• No absolute contraindication to laparoscopic approach
• Know the limitations of methotrexate treatment
• All things considered, salpingectomy may be best option