



International Federation of Gynecology and Obstetrics





SURGICAL PROCEDURES IN ART PITFALLS

Edgar Mocanu MD

FIGO REI Committee

RCSI, Dublin, Ireland

emocanu@rcsi.ie



San Jose, December 2016



OBJECTIVES

- Quality services in ART theatre
- Staff training standards
- Tips and tricks



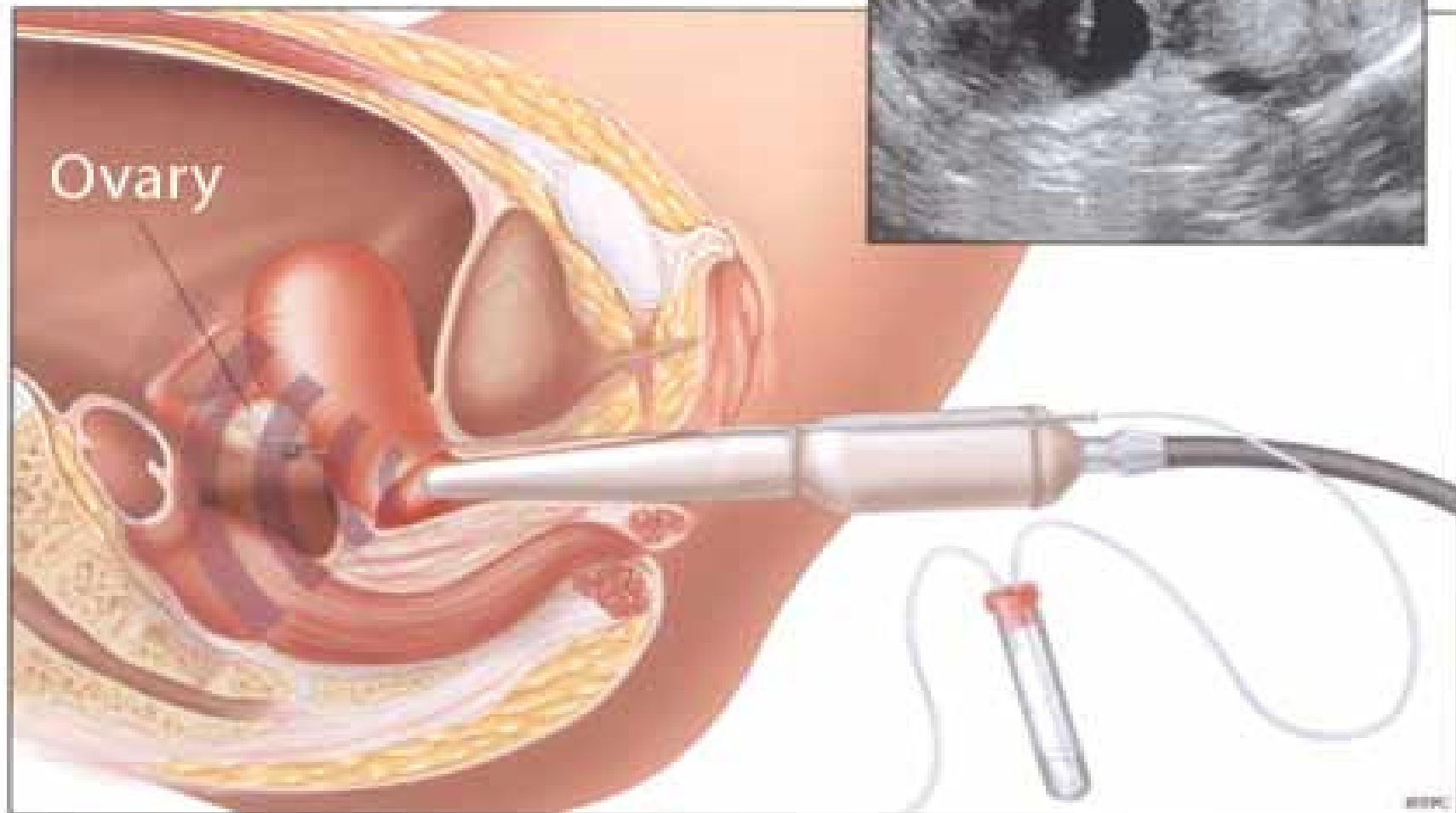
DISCUSS

- Good clinical practice
- Staff training
- Oocyte retrieval
- Embryo transfer
- *Testicular biopsy*



OOCYTE RETRIEVAL

Ultrasound View





PRE - EGG RETRIEVAL

- **Establish risk**
 - Low risk – performed in out of hospital facilities
 - Higher risk – in hospital facilities
 - High risk – treatment offered?
- **Anaesthesia clinic**
 - Anybody with a risk during surgery
 - Transplant
 - Chronic respiratory, renal, cardiovascular disease
- **hCG administration**
 - Verify before theatre



PRE - EGG RETRIEVAL

- Consent
- Checklist
- Witnessing



INFORMED CONSENT

- Procedure
- Risks and Complications
- Alternative treatments or operative measures
- Anaesthesia
- Declaration by the surgeon that above have been discussed

RISKS

- Bowel, bladder perforation
 - Blood vessel injury
 - Ovarian torsion
 - Infection-peritonitis
 - Laparotomy
-
- Measure and quote (1:1000)

Reprod Biomed Online. 2008 Aug;17(2):237-43.

Complications related to ovarian stimulation and oocyte retrieval in 4052 oocyte donor cycles.

Bodri D¹, Guillén JJ, Polo A, Trullenque M, Esteve C, Coll O.

+ Author information

Abstract

A retrospective study was conducted in a private infertility centre to evaluate the rate of complications in a large oocyte donation programme. A total of 4052 oocyte retrievals were performed between January 2001 and October 2007. Altogether, 1238 cycles (30.6%) were stimulated with the use of gonadotrophin-releasing hormone (GnRH) agonists and in 2814 cycles (69.4%) the GnRH antagonist protocol was used. The GnRH antagonist treated cycles were triggered with human chorionic gonadotrophin (HCG) or a GnRH agonist in 1295 and 1519 cycles, respectively. Complications related to oocyte retrieval occurred in 17 patients (0.42%) (intra-abdominal bleeding: n = 14, severe pain: n = 2, ovarian torsion: n = 1). Fourteen of these were hospitalized (0.35%) and six donors (0.15%) required surgical intervention. Pelvic infections, injury to pelvic structures or anaesthesiological complications were not observed in this series. Moderate/severe ovarian hyperstimulation syndrome (OHSS) occurred in 22 donors; 11 required hospital admission and 11 were managed on an outpatient basis. All cases were related to HCG triggering (0.87%). Serious complications related to oocyte retrieval occurred at a low rate in healthy young donors. The risk of OHSS can be substantially reduced by specific stimulation protocols, which include GnRH agonist triggering. Prospective oocyte donors should be adequately counselled about the risks related to egg donation.

PMID: 18681998



PRE-OP CHECK LIST

Alerts from Previous Procedures in HARI: _____

BP: _____ Pulse: _____

O2 SAT: _____

Resp: _____

Fasting Since? _____

Partner Present And Available _____

Bladder Emptied _____

Make Up, Contact Lenses/Dentures Removed _____

Relevant Medications _____

Consents Signed _____

Time, Date, Dose hCG? _____

Administered By Whom? _____

Previous Anaesthetic Problems? _____

Allergies? _____

Completed by _____

Date _____

- Active witnessing
- Both male and female
- Procedure
- Lab involved

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DURING EGG RETRIEVAL

- **Anaesthesia**
 - Anaesthetist
 - Doctor delivered
- **Ergonomics**
 - US, assistant, anaesthesia machine
 - Tube heaters; emergency trolley
- **Streamlining**
 - Doing no other duties while operating
- **Lab equipment in theatre**
 - IVF chamber
 - Microscope
- **Back up**
 - Aspiration pump, US probe, tube heaters, light bulb



DOCUMENT ALL

- Procedure
 - Outcome
 - Complications and actions taken
 - Antibiotics

- Recommendations (vaginal pack)

- **Database**



TECHNICAL CHALLENGES

— The “difficult to enter” ovary

- Needle
- Angle
- Force

— The “difficult to view” ovary

- Find best angle
- Reinsert needle

— Follicle or blood vessel?

- Use Doppler, rotate probe

— The “tired shoulder”

- Use elbow on knee technique



QUALITY

- **Do**

- Timely egg retrieval
- Witnessing
- Staff know their role
- Efficient
 - Quick
 - Effective
 - Safe (no risks)
- Communicate with couple at the end
- Use vaginal wound pressure at end of procedure

- **Do not**

- Take risks that are unwarranted
 - Mobilising the ovaries through the abdomen
 - Retrourterine ovary that does not mobilise
 - Poor view; needle not seen
- Wonder with the needle
 - Still, aspirate, move



RECOVERY AND DISCHARGE

- **Recovery**

- Full time monitoring
 - Airway
 - Respiratory rate
 - SaO₂
 - BP, HR, Temp
 - Pain, sedation, nausea scores
 - PV loss
 - Passed urine

- **Discharge**

- Consciousness
- Pain control
- Oral fluids
- i.v. cannula
- Vaginal pack
- PV loss
- Instructions
- Accompanied
- Discharged by
 - Time and signature



AFTER EGG RETRIEVAL

- Emergency cover
 - Provide numbers where the patients can contact the unit
 - Exact instructions of what to do
- Antibiotics
 - Use antibiotics if endometriosis diagnosed or previous history of PID
 - *After testicular biopsy*



EMBRYO TRANSFER

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PRE ET

- Decision on numbers to transfer
 - Scientists and medical staff to decide the number of embryos in advance of transfer
- Consent
 - Included in the procedure documentation
 - Number of embryos to be transferred
 - Signed by both partners
 - Risk of multiple pregnancy included



IN THEATRE

- ID
 - Active witnessing by two scientists
 - Recorded in chart and signed by both



DURING EMBRYO TRANSFER

- Partner
- Bladder
- Ultrasound - reassurance
- Nurse help with US and patient comfort



DURING EMBRYO TRANSFER

- Catheter
 - dummy transfer
 - no pre-loading
 - US visible
- Embryos in incubator at all times



AFTER EMBRYO TRANSFER

- Rest
- Advice
- Progesterone use
- Follow up hCG levels
- Emergency contact numbers



STAFF TRAINING

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See

Catheter choice
Technique
Ultrasound use

Do

Theory
IUI
Embryo transfer

Audit

All embryo transfers (50%)

Improve

Maintain skills
Teach



Training plan

SPECIFIC TRAINING PLAN Complete each specified task once under supervision	Chart Number	Complete Date	Trainee Signature	Trainer Signature
Orientation to HARI Unit <i>Introduction to the HARI Unit and personnel. Information on working hours, annual leave entitlements, direct line manager and deputy.</i>				
Interview / Review Process <i>Rapport with couple, Dealing with patients, Knowledge of Medical Treatment, Complications of treatment, Donor Selection, evaluation and testing, Use of visual aids, Handling of Questions, Accurate Record Keeping, Complete record keeping.</i>				
Oncology Consultation <i>Rapport with couple, Dealing with patients, Knowledge of Medical Treatment, Donor Selection, evaluation and testing, Use of visual aids, Handling of Questions, Accurate and Complete record keeping.</i>				
Follicle Tracking Consultation <i>Rapport with couple, Dealing with patients, Knowledge of Medical Treatment, Donor Selection, evaluation and testing, Use of visual aids, Handling of Questions, Accurate and Complete record keeping.</i>				
Oocyte Recovery <i>Rapport with couple, Pre-Surgical check-up, Patient Identification and Consent, Operative skills, Post-operative skills, Accurate and Complete record keeping.</i>				
Cyst Drainage <i>Rapport with couple, Pre-Surgical check-up, Patient Identification and Consent, Operative skills, Post-operative skills, Accurate and Complete record keeping.</i>				
IUI Procedure <i>Rapport with couple, Pre-Surgical check-up, Patient Identification and Consent, Operative skills, Post-operative skills, Accurate and Complete record keeping.</i>				
Embryo Transfer <i>Rapport with couple, Patient Identification and Consent, Transfer Technique, Follow-up discussion, Accurate and Complete record keeping, Individual pregnancy rate.</i>				
TESE <i>Rapport with couple, Pre-Surgical check-up, Patient Identification and Consent, Operative skills, Post-operative skills, Accurate and Complete record keeping.</i>				



Co-pilot

- Dedicated, qualified trainers
 - certified externally or internally
 - Show how to do it - observation
 - “Hands on” supervised training
 - Feedback
- Trainer in Charge (Master)



Surgical procedures OR (70)

Rep Number	Date	C No	No. Follicles	Mentor	Rep Number	Date	C No	No. Follicles	Mentor
1					11				
2					12				
3					13				
4					14				
5					15				
6					16				
7					17				
8					18				
9					19				
10					20				

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Fly on your own

- Distance supervision (in the building)
 - Gaining confidence and rarely asking for support
 - Refining the skills
 - Taking more calculated risk
 - *Does work outside weekdays*

I MAY NOT BE
PERFECT
BUT PARTS
OF ME ARE PRETTY
AWESOME



IUI and embryo transfers

- Catheters
- Day of transfer
- Discussion and consent
- Bladder
- Observe
- Do
- Do without supervision
- Train



IUI and embryo transfer (70)

Rep No	Date	C No	No. of Embryos	Trainee	Mentor	Rep No	Date	C No	No. of Embryos	Trainee	Mentor
1						11					
2						12					
3						13					
4						14					
5						15					
6						16					
7						17					
8						18					
9						19					
10						20					

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Embryo transfer sign-off

Embryo Transfer Metrics

Number of Difficult Transfers performed: _____

Total number of Transfers performed: _____

Positive pregnancy Rate: _____

Further training necessary ☐ Yes ☐ No

Additional Comments:

Training Completed and Final Supervision by Consultant in Charge

Trainee Signature : _____ Date; _____

Mentor Signature: _____ Date; _____

Consultant in Charge Signature: _____ Date; _____

Certification

- Accurate
 - Measure of quality
 - True reflection of abilities
-
- Competent
 - Safe
 - Constant performance





Continuous improvement

- Analysis of results
 - Complication rates
 - Pregnancy rates
- Suggesting improvements in technique or processes
 - Protocol writing
 - New expertise build-up

Ulster Med J 2014;**83**(3):146-148

Case Report

Transvaginal Oocyte Retrieval Complicated by Life-Threatening Obturator Artery Haemorrhage and Managed by a Vessel-Preserving Technique.

Ferdia Bolster¹, Edgar Mocanu², Tony Geoghegan¹, Leo Lawler¹

Accepted 11th June 2014

preserving covered stent.

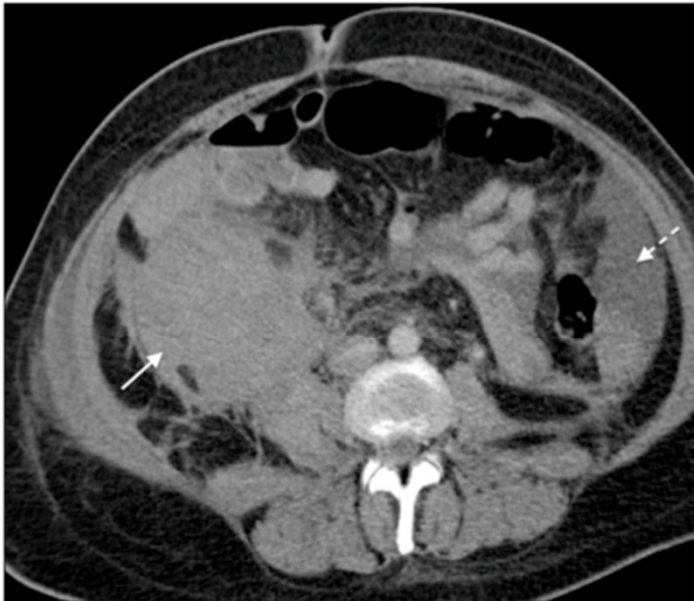


Fig 1. CT demonstrates a large right sided retroperitoneal haematoma (solid white arrow) and intra-abdominal free fluid consistent with haemorrhage (interrupted white arrow).

endovascular assessment and therapy.



Fig 2. CTA demonstrates a vascular "blush" of a 2cm pseudoaneurysm and active extravasation from a branch of the right internal iliac artery (white arrow).

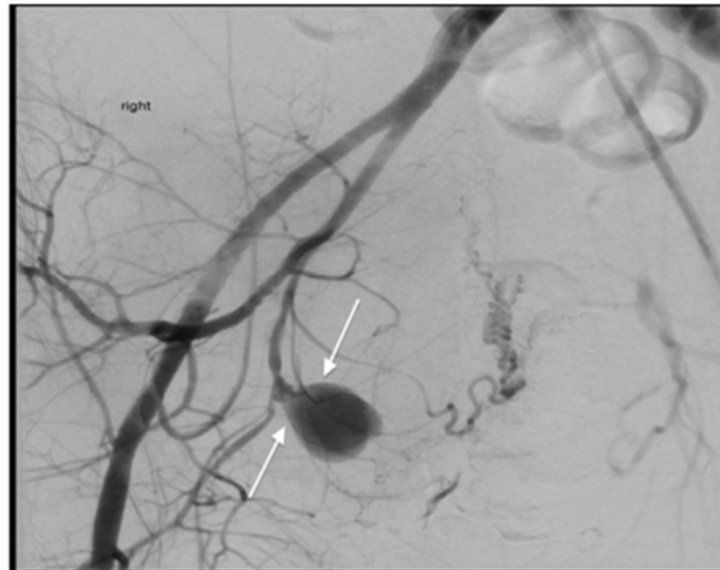
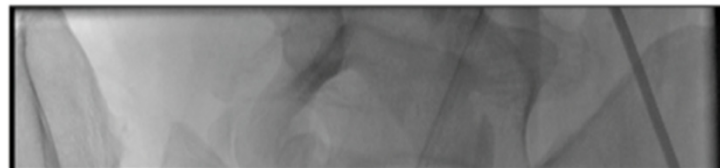


Fig 3. Up and over selective cannulation of the right internal iliac artery was performed and demonstrated a 2cm saccular obturator artery pseudoaneurysm (white arrows).

DISCUSSION:

Transvaginal oocyte retrieval is a frequently performed assisted reproduction technology (ART) procedure. Under direct ultrasound guidance an aspiration needle is passed through the lateral fornix of the vagina into the stimulated ovary with subsequent aspiration of follicles.



in the literature^{3,4}. Both previously described cases presented much later following initial oocyte retrieval with one patient presenting in the 29th gestational week and the other over 10 years after successful IVF^{3,4} and neither case presented in extremis. Lifesaving laparoscopy or laparotomy may be required in cases of large bleeding⁵.

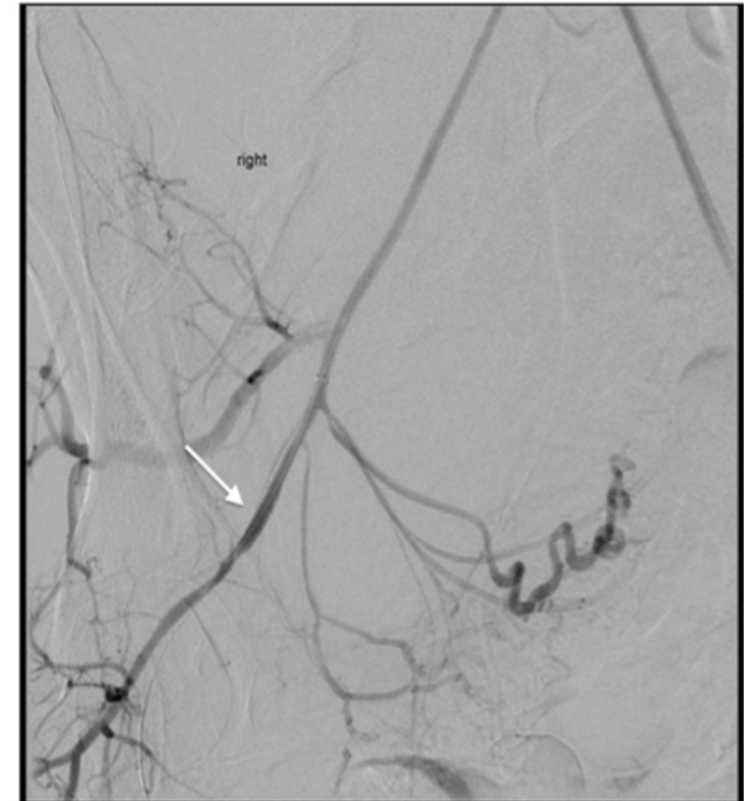


Fig 5. Post stenting DSA showed good stent position and cessation of extravasation of contrast with preservation of the native artery (white arrow).



DISCUSSED

- Egg retrieval
 - Practical approach
 - Tips and tricks
 - Good clinical practice
- Embryo transfer
 - Good clinical practice
- Training



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THANK YOU

