


The procedures during fertility treatment

Ultrasound scanning, egg collection and embryo transfer


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Objectives

Understanding of:

- Scanning
- Recognition of images
- Use of ultrasound in fertility care
- Egg Collection (Follicle Puncture)
- Embryo Transfer



History

- 1953 first real time images
- Hyperstimulation without ultrasound
- First use of ultrasound in fertility care

Ultrasound: How does work

- Transducer sends high frequency sound waves
- Different tissue, different amount of sound waves
- Transducer receives sound waves
- Sound waves are put into images

Ultrasound scanning

Types of transducers used in gynecology

- Vaginal probe
- Abdominal probe



Transvaginal ultrasound

- High resolution
- Close to organs
- Best for small organs
- Empty bladder



Transabdominal ultrasound

- Low resolution
- Gives a better overview
- Best used with large organs
- Full bladder



Ultrasound terms

- Echogenic (hyperechoic):
 - reflects most ultrasound waves
 - white or bright
- Anechoic (hypoechoic):
 - transmits most ultrasound waves
 - dark or black
- Isoechoic (homogenous) :
 - both reflects and transmits ultrasound waves
 - grey



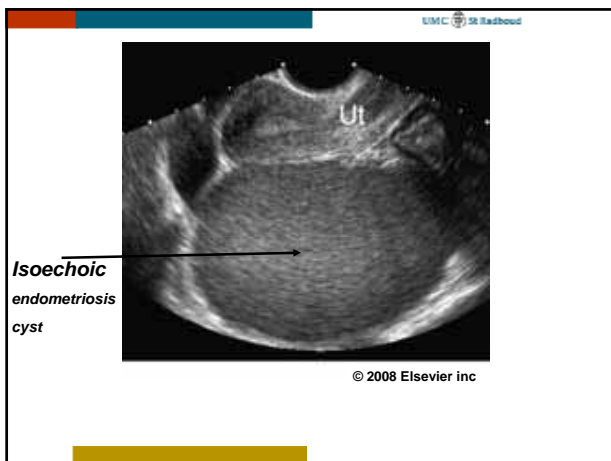
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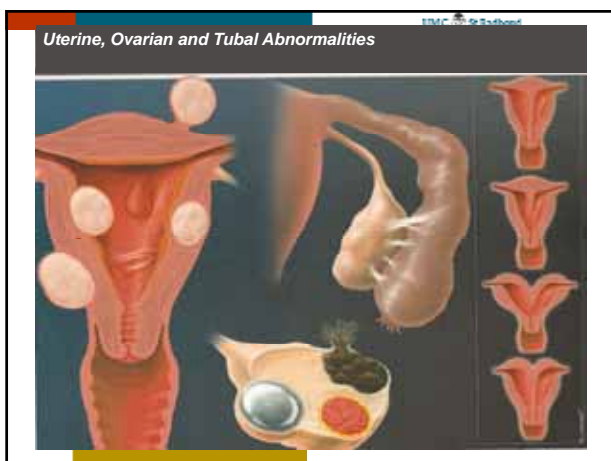
Use of ultrasound in fertility care

Diagnose:

- Status of fertility
- Abnormality uterus and ovary

Check-up during treatments

- Ovulation induction/IUI
- IVF/ICSI
 - Hyperstimulation
 - Follicle puncture
 - Embryo Transfer



First Ultrasound

Uterus: Thin endometrial

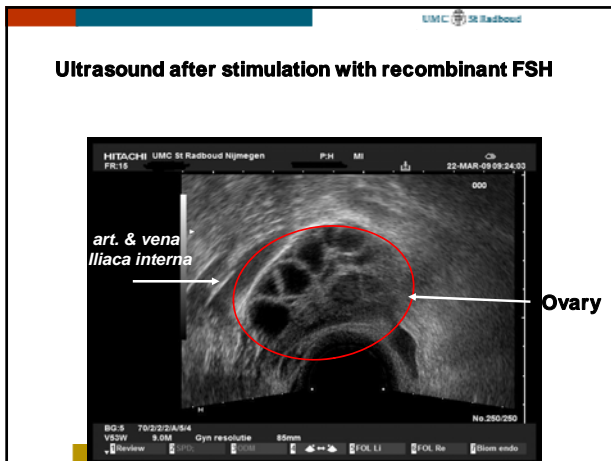


Ovary: anteral follicles



Endometrium proliferative Phase

- Developing follicles → Estrogen goes up
- proliferation of the endometrial (8-16 mm)
- Triple layer



UMC St Radboud

Endometrium proliferative Phase

Developing follicles → Estrogen goes up

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Thick endometrial

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cyclus

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Measure follicles


- Two-dimensional
- three dimensions

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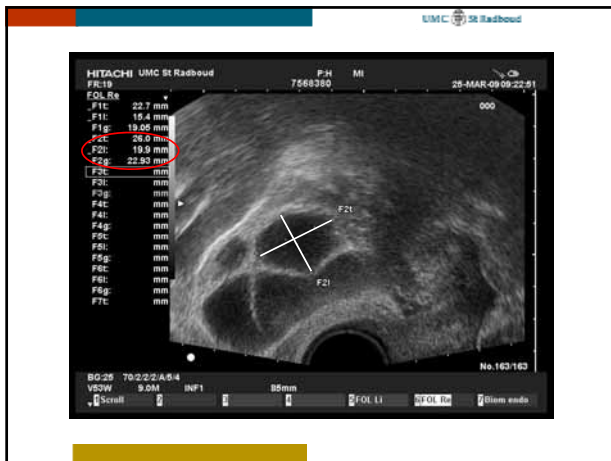


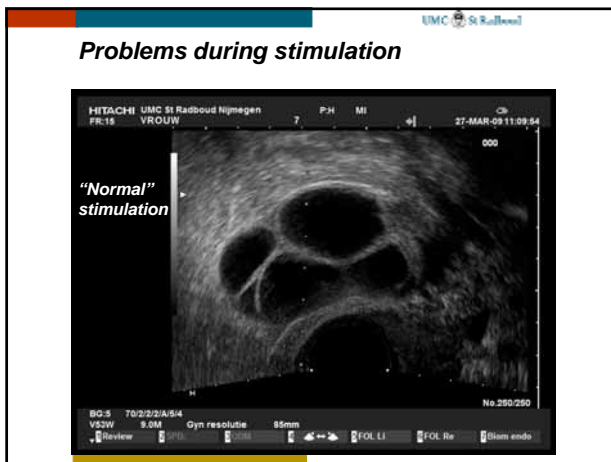
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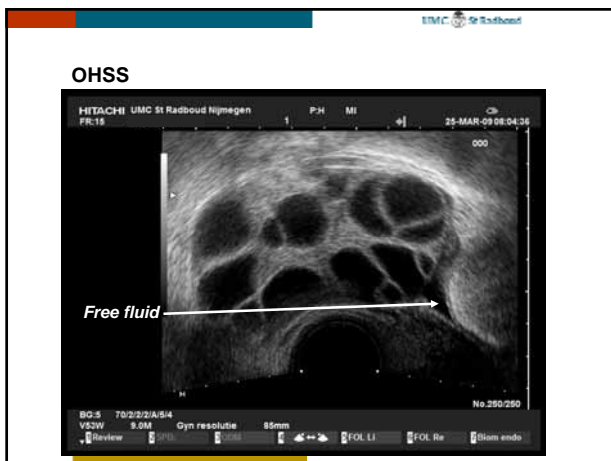
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BG-9 70/2/22/A/6/4
V52W 9.6M Gyn resolutie 65mm





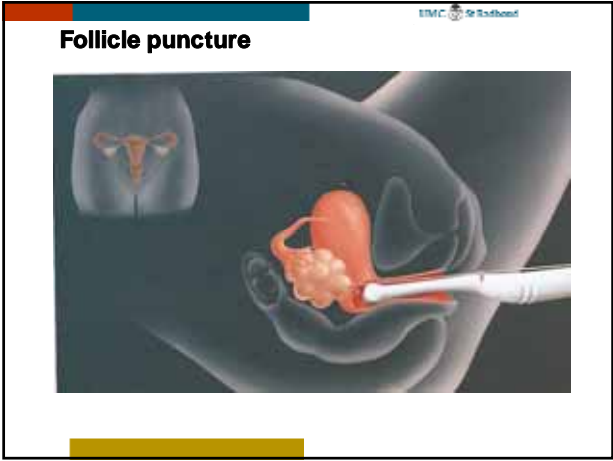


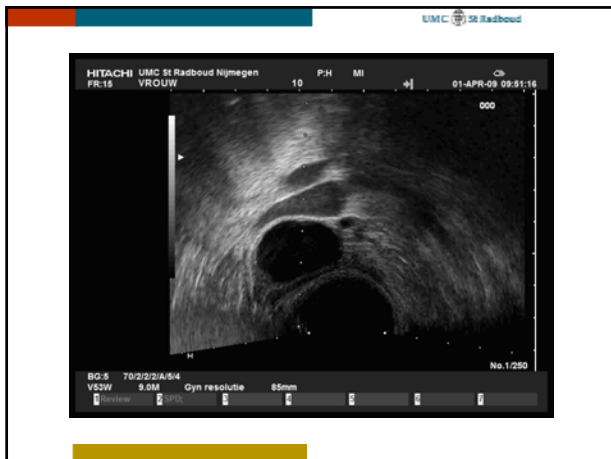


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Follicle puncture

- Time to schedule a follicle puncture
- 36 hours after hcg injection
- Anaesthetic
- Procedure



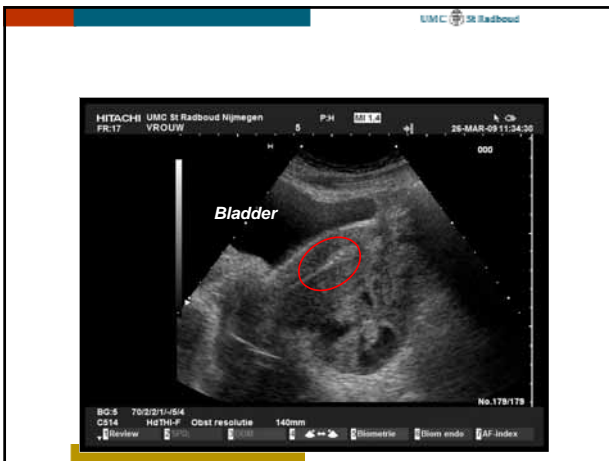


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Embryo Transfer

- Day of the embryo transfer
- Procedure
- Use of ultrasound





Take home Message

- Without ultrasound, IVF/ICSI treatments are impossible

