

Case 2: Mrs. Sheila

You are a third-year medical student in an outpatient clinic when Mrs. Sheila, G1P0A1, a 35 years old female, presents for secondary infertility consultation with her husband, Mr. Conrad.

She had her first menstrual period when she was 14 years old. It became regular in a year or so. Her current menstrual cycle was 28-30 days with 4-5 days flow. She denies using any contraceptive.

1. **Identify this couple's problems.**
2. **What further information would you need?**

After spending some time for anamnesis, the doctor discovered that the couple had sexual intercourse "several times a week" especially during the first week after her period was over. They thought that the first week after her period is the most fertile time.

Conrad says "I am running a business that makes me travels a lot for quite some time every month. But I have arranged that in the week after Sheila's menstruation had stop I can stay here and we managed to have sexual intercourse several times in a week. I have no problem in getting or maintaining an erection, and it usually leads to ejaculation".

Conrad denies using any sexual lubricants.

The physical examination and laboratory test upon Conrad had been conducted before this couple came to the clinic. Physical examination findings were within normal limit, hormonal assay: FSH, LH, Testosterone and estradiol are within normal limit, and semen analysis was normal too.

They are both denies the use of tobacco, alcohol, or any other drugs.

1. **What further investigations, if any, of this couple would be appropriate at this point?**
2. **Does smoking cause infertility?**

Sheila is not taking any medications and has no allergies to medication. She has two older sisters, both of them have two children each and did not have any problems with fertility.

Further anamnesis revealed that Sheila had a past history of pelvic inflammatory disease and experienced an ectopic pregnancy about 10 years ago. She underwent a laparotomy and she remembers that the evacuation of ectopic pregnancy was performed and also some kind of tuboplasty was performed. The patient denies that there was any salpingectomy of either side involved. Five years ago, a hysterosalpingogram (HSG) was performed and right sided hydrosalpinx was noted. The left tube was described as normal although without spill and the uterine cavity was described to be normal.

Physical examination:

Vital signs : BP 110/70 mmHg, pulse 80x/min, respiratory rate 18x/min, temperature 36.8°C

Thyroid : non palpable

Lungs : clear

Heart : regular rate and rhythm without audible murmurs

Abdomen : normal bowel sounds, soft, nontender, no palpable mass
 Pelvic : normal external genitalia, cervix normal, no lesions, uterus anteverted normal size, adnexa nontender, no masses bilaterally

Rectovagina : confirm

Sheila is suggested to do another HSG to confirm her last HSG and the result as follows:

HSG :- left tube normal fill and spill and caliber
 - right tube was not visualized, presumed proximal occlusion
 - normal uterus

Ultrasound scanning upon uterus and adnexa showed normal result, with evidence of adequate hormonal stimulation and responses on the endometrial layer.

Blood sample taken at 3rd day of periods

- Thyroid function was normal
 - Prolactin = 3.9 ng/ml (N= 1 - 20 ng/ml)
 - FSH = 6.5 IU/L (N= 5 - 20 IU/L)

1. **What are Sheila’s problems now?**
2. **Explain about current investigation of Sheila’s condition!**
3. **What would be your suggestion for the couple’s problem now?**

Conrad’s semen analysis is done two weeks later.

Parameter	Result	Normal
Volume	2.2 cc	2-6 cc
Liquefaction and color	Normal	Normal
Sperm morphology	60% Normal	> 30% normal
Sperm motility	65%	> 50%
Sperm count	22 million/ml	> 20 million/ml

- **What is a semen analysis?**
- **What are the factors which can influence the semen analysis findings?**
- **Explain the significance of those factors in his semen analysis findings!**

After several procedures, they were recommended to have IVF (in vitro fertilization). Subsequently, the patient and her husband underwent IVF. Six oocytes were retrieved after a cycle of stimulation, and all were fertilized. On day 3 five embryos were transferred and Sheila achieves pregnancy.

One year later Conrad and Sheila return and tell you that they have got a healthy baby.

- **Discuss the physiology of fertilization pertaining to timing, anatomical and hormonal factors in female!**