GYNAECOLOGY
Short answer Questions
Notes Style
Quick Recall

With special thanks to my kids and family for helping and supporting me through out.

Reference:
Gynaecology 20th editition by Ten Teachers.

Introduction

Welcome to Quick Recall & Revision: The Ultimate Short Answer Guide for Undergraduate Students. Whether you're gearing up for midterms, finals, or standardized tests, this book is designed to be your go-to resource for efficient, high-impact study. We know how overwhelming university coursework can be, and how challenging it is to juggle multiple subjects, deadlines, and exams. That's why we've created this guide—so you can focus on what truly matters: mastering key concepts and acing your exams.

This book takes a straightforward, no-frills approach to revision. It distills complex topics into short, clear, and precise answers, allowing you to absorb and retain the information quickly. By organizing essential material in short-answer format, we've made it easy to review core concepts, strengthen your recall, and develop effective exam strategies. Whether you're revisiting material you've already studied or cramming in the final days before an exam, you'll find this guide invaluable for last-minute revision and focused learning.

The goal of Quick Recall & Revision is simple: to help you excel academically by providing a tool that encourages quick recall, efficient studying, and better exam performance. With each page, you'll feel more confident in your ability to tackle any exam with clarity and precision. Let's dive in and make studying not just effective—but truly efficient.

Preface

As an undergraduate student, you're likely no stranger to the pressure of exams, assignments, and deadlines. Navigating through dense textbooks, lengthy lectures, and a multitude of topics can sometimes feel overwhelming. We understand that in the rush to stay on top of coursework, it can be difficult to carve out enough time for effective revision—especially when exams are just around the corner. Quick Recall & Revision: The Ultimate Short Answer Guide for Undergraduate Students is here to make your study sessions smarter, not longer.

This book was created with a single purpose in mind: to help you streamline your revision process and maximize your exam performance. It's designed for busy students who need a practical, efficient way to review key concepts quickly and retain them for exams. The format is simple—short, focused answers that highlight the essential points you need to know. Rather than overwhelming you with excessive detail, each entry gives you the core information in a digestible form that's easy to remember and apply.

We've crafted this guide with a broad range of undergraduate subjects in mind, so no matter what field you're studying, you'll find it an invaluable companion in your exam preparation. It's not just about memorization, but about helping you understand and recall material quickly when it matters most. The goal is to provide you with a tool that fosters confidence, enhances recall, and helps you perform at your best when exam day arrives.

Whether you're revisiting material for a final exam or reviewing over a few days before a midterm, Quick Recall & Revision is designed to be your go-to reference for quick, effective revision. We hope this book will help you study more efficiently, reduce stress, and ultimately succeed in your academic journey.

Humna Mian Faiz Rasul
Qurat ul Ain Shehzad

Q.1: A 30 years old female visits for booking ultrasound at 12 weeks of gestation and is disclosed that she has female fetus. Will you be able to answer the following questions related to sexual differentiation of the fetus and development of sexual organs.

a) Name two structures of fetus which have potential to develop into external genital?

Mullerian – Paramesonephric ducts
Wolffian – Mesonephric ducts

b) Explain development of female sexual organs?

i) Primordial follicles formed when granulosa cells derived from proliferating coelomic epithelium, surround the germ cells.

ii) There is an oocyte in each primordial follicle.

iii) Theca cells form around granulosa cells separated by basal lamina. They also originate from proliferation coelomic epithelium.

iv) All 20 weeks – six to seven million primordial follicle.
At birth – 1 – 2 million
At menarche – 300,000 – 400,000
At menopause - None

v) The oocyte development is arrested in prophase of first meiotic diversion.

vi) Absence of AMH (anti-mullerian hormone) allows the development of mullerian structures.

vii) Mullerian ducts from uterus
cervix
Upper vagina
Proximal 2/3rd of vagina

viii) Unfused caudal segment forms – fallopian tube

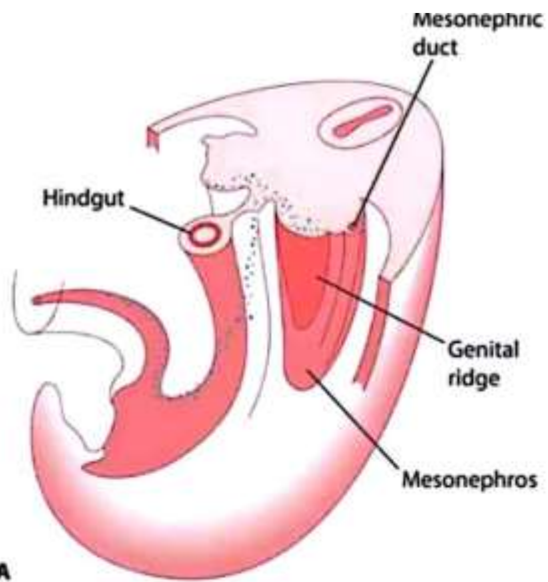
ix) The mullerian tubercle and urogenital sinus fuse to form vaginal plate which extends from mullerian duct to urogenital sinus.

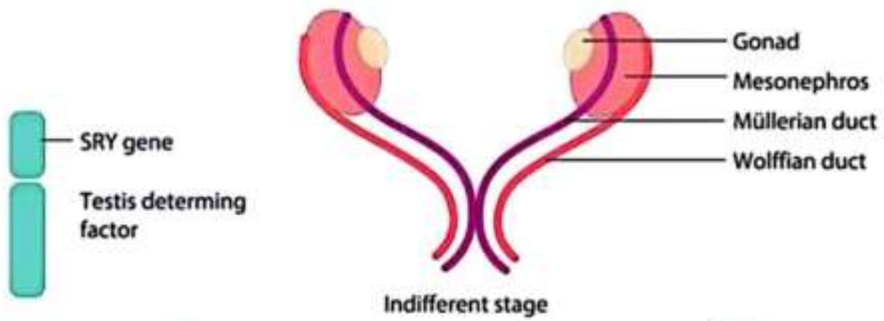
x) Canalization occurs in sixth month of intrauterine life.

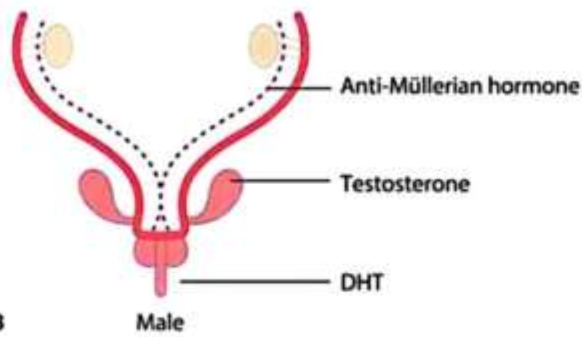
xi) What is the embryological origin of external male genitalia?

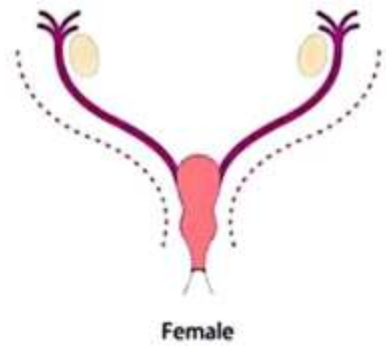
Penis – Genital tubercle

Serotum – Labioscrotal fold.


Mesonephric
duct
Hindgut
Genital
ridge
Mesonephros
A


Gonad
Mesonephros
Müllerian duct
Wolffian duct
SRY gene
Testis determing
factor
Indifferent stage


Anti-Müllerian hormone
Testosterone
DHT
B
Male


Female

Q.2: A 16 years old girl presents to the clinic with primary amenorrhea She has normal development of secondary sexual characteristics, including breast and pubic hair but never had menstrual period. An ultrasound reveals absence of uterus and upper two third of vagina, while she has normal ovaries.

a) What is the likely diagnosis?
MRKH – Mayer – Mayer – Rokitansky – Kusler – Hauser syndrome

b) Explain the gender basis of the diagnosis?
It is a congenital disorder where Mullerian ducts falls in develop due to which uterus and upper vagina are not formed. The patients has 46xx karyotype and normal functioning ovaries.

c) Enlist the treatment options?

i) Psychological support
ii) Creation of a vagina comfortable for penetrative intercourse
iii) Extensive research is ongoing into uterine transplant

d) Can they have their own genetic children

Yes, ovum retrieval

Assisted conception techniques

Surrogate mother

Key points:

Phenotype:	Female
Genotype:	46X
Internal gonads:	Ovary
External genitalia:	Female
Anomaly:	Absent uterus and upper 2/3rd of vagina

Q.3: A 45 years old women presents to gynae outpatient department with complain of irregular heavy menstrual bleeding over past six months. She has no significant medical history but complains of dizziness and fatigue with shortness of breath. She is consented for biopsy of endometrium using appetites.

a) What is important to rule out before attempting biopsy and how?

Pregnancy

Urine pregnancy test

b) Enlist indications for biopsy of endometrium?

Women age >45 years with menstrual symptoms

Heavy menstrual bleeding with inter-menstrual bleeding

Post-menopausal bleeding and CT $\geq$ 4mm

Treatment failure

Prior of endometrium ablation

Risk factors for endometrial pathology e.g. obesity

c) Enlist the required investigations to make an appropriate diagnosis

- FBC to look at Heamoglobin, platelets
- Full blood count
- Thyroid function tests if any signs and symptoms of thyroid dysfunction
- Hormones as irregular cycle
  LH, FSH
- Transvaginal ultrasound for
  - Morphology of uterus
  - Status of ovaries
  - Thickness of endometrium
- Consider swabs if suggesting symptom
- Cervical screening if not uptodate

d) She has 2.x 1cm submucosal fibroid in the uterine cavity. What should be the treatment option?

Transcervical resection of sub-mucosal fibroid

The Pipelle® is a single-use, sterile, disposable, suction curette for obtaining a histologic biopsy

Q.4: A 8 years old girl presented to gynae outpatient department accompanied by her parents that she has started developing breast tissue and pubic hair. Her growth has been showing significant rise in her height. She has no significant medical history. On examination she has Tanner stage three for breast development and pubic hair?

a)s What is the most likely diagnosis?
Precocious puberty

b) Define delayed puberty?
Delayed puberty is defined as when there are no signs of secondary sexual characteristics by the age of fourteen years.

c) Enlist comes of precocious puberty?

- Central precocious puberty
  Gonadotrophin dependant
  Often unknown etiology
  25% due to malformation in the central nervous system or tumor in the brain
- Peripheral precocious puberty
  Independent of gonadotropins
  Always an underlying pathology is the cause of symptoms
  - Due to exogenous ingestion of estrogen
  - Hormone producing tumors.

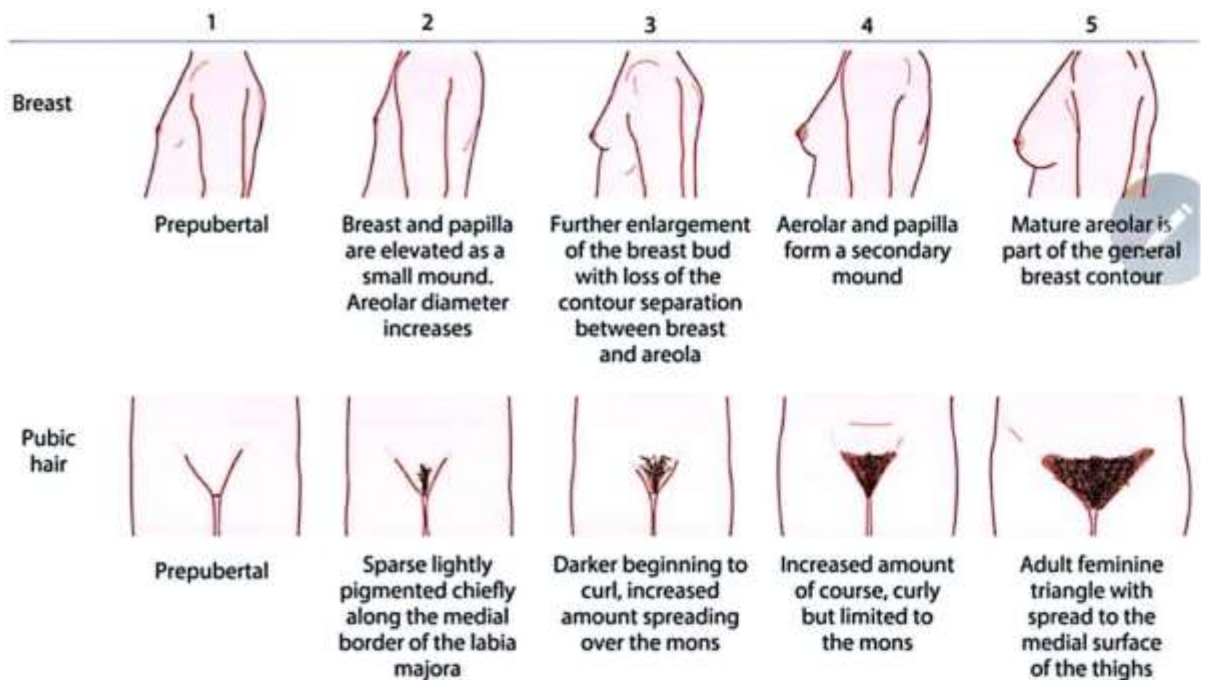
d) Enumerate the physical changes in puberty?

1- Breast development (Thelarche)
2- Pubic and Axillary hair growth (Adrenarche)
3- Growth spurt
4- Onset of menstruation (menarche)

e) What do you know of Tanner staging?
Diagram attached

Facts:

- Mean age of menarche 12.8 years
- Precocious puberty onset of puberty before age of 8 in girls and 9 in a boys.



Q.5: A 22 years old women presents to clinic with concerns about infrequent menstrual periods, occurring every three to four months. She has normal BMI, no significant medical history and denies any stress, weight, charge or excessive exercise. Her physical examination is normal. She has normal thyroid function but mildly elevated androgen levels.

a) What is the most likely cause of her symptoms?
PCOS: Polycystic Ovary syndrome

b) Define amenorrhea, oligomenorrhea?
Amenorrhea: it is defined as the absence of menstruation for more than 6 months
Primary amenorrhea: Female who has never had menstrual cycle by 16 years of age.

Secondary amenorrhea: When they stop after having normal menstrual cycle previously. If could be

Physiological: Pregnancy

Pathological: Premature ovarian failure
Polycystic syndrome

Oligomenorrhea:

- Irregular periods at interval of more than 35 days.
- When a female has only 4-9periods in one year.

c) How will you approach manage amenorreal oligomenorrhoa, history and examination?

- Any history of menstrual cycle previously.
- Pattern of menstrual cycle.
- Date of last menstrual period.
- Any history of headache, visual disturbance, discharge from breast

Examination

- Any surgery for cervix or uterus.
- BMI: body mass index
- Secondary sexual characteristics.
↓
- Tanner staging for breast development, axillary and pubic hair.
- Assessment of version if history suggestive of visual field different lesion in pituitary.
- Examination of external genitalia and vaginal examination with consent and chaperone.

Investigations

- Pregnancy test
- LH/FSH/testosterone – to rule out PCO
- Prolactin – to rule out prolactinoma
- Thyroid function tests – to rule out thyroid dysfunction if clinically indicated.
- Ultrasound scan – for uterine morphology and ovaries.
- MRI brain – If rule out pituitary adenoma
- Hysteroscopy – when suspecting Asherman or cervical stenosis
- Karyotyping – to rule out abnormalities in genetics.

Treatment

- Any surgery for cervix or uterus.

Table 3.2 History and examination of patient with amenorrhea/ oligomenorrhoea

Information required	Relevant factors	Possible diagnoses
Developmental history including menarche **Menstrual history**	Delayed / incomplete puberty Oligomenorrhoea Secondary amenorrhea infertility	Congenital malformation or chromosomal abnormality PCOS POF
Reproductive history	Infertility	PCOS
Cyclical symptoms	Cyclical pain without menstruation	Congenital malformation Imperforate hymen
Hair growth weight	Hirsutism Dramatic weight loss Difficulty losing weight	PCOS Hypothalamic malfunction PCOS
Lifestyle **Past medical history** **Past surgical history** **Drug history** **Headache** **Galactorrhoea** **Visual disturbance**	Exercise , stress systemic diseases (e.g. sarcoidosis) Evacuation of uterus Dopamine agonists, HRT	Hypothalamic malfunction Hypothalamic malfunction Asherman Hypothalamic Malfunction Pituitary adenoma Prolactinoma Pituitary adenoma

HRT , hormone replacement therapy: PCOS, polycystic ovary syndrome; POF premature ovarian failure.

Table 3.3 Management of amenorrhea/oligomenorrhoea

Cause	Management
Low BMI **Hypothalamic lesions (e.g. glioma)**	Dietary advice and support surgery
Hyuperprolactinaemia/ prolactinoma	Dopamine agonist (e.g. cabergoline or bromocriptine) or surgery if medication fails
POF	HRT or COCP , see chapter 8 COCP, clomiphene, see below
PCOS	COCP, clomiphene, see below
Ashrman's	Adhesiolysis and IUC insertion at time of hysteroscopy, see Chapter 17
Cervical Stenosis	Hysteroscopy and cervical dilatation see chapters 16 and 17

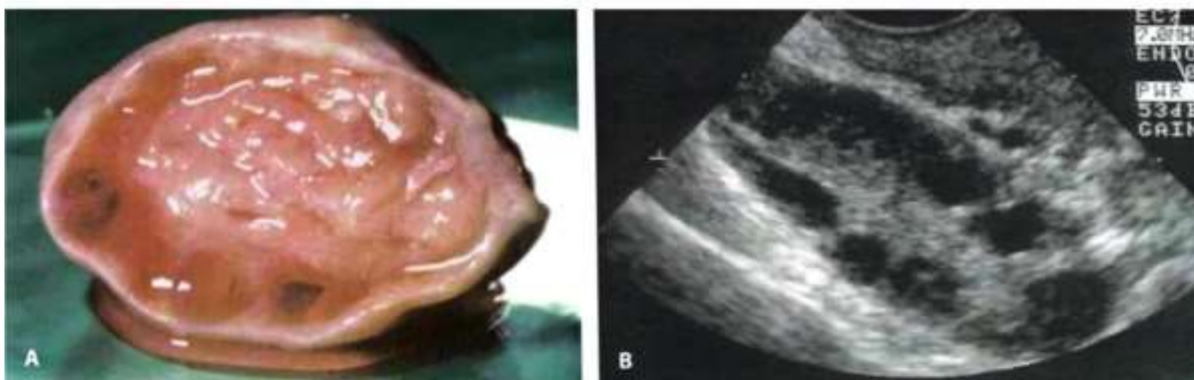
Q.6: A 19 years old woman presents to the gynae outpatient department reporting irregular menstrual cycle, withes periods coming every three to four months. She also complaints of acne and increased fascial hair growth over past year. Her BMI is 29, and she has no other significant medical history. Blood test reveals elevated testosterone levels and a normal thyroid profile.

a) What is the likely diagnosis?
   Polycystic ovarian syndrome – PCOs

b) What is Rottaderm criteria for diagnosis?
   Patient should have atleast two of the following to quality PCOs.
   i) Amenorrhea / oligomenorrhea
   ii) Clinical or biochemical hyper androgenism
   iii) Polycystic ovaries on ultrasound. The ovaries are said to be polycystic on scan if there are eight or more sub-capsular follicular cysts <10 mm in diameter and increased ovarian stroma.

c) How will you treat a core of PCOs?
   i) To regulate menstruation – combined oral contraceptive pill. They also help to decrease androgenic signs and symptoms by increasing sex hormone binding globulins.
   ii) To regulate with drawl bleeding – cyclical oral progesterone.
   iii) For ovulation if presenting with subfertility, elomiphene citrate. Ovarian drilling – destroying some of ovarian stroma laparoscopically using diathermy. Principle behind this is it promote ovulatory cycles.
   iv) Metformin – improves – insulin resistance
       hyperandrogenaemia
       anovulation acne help
       with loosing weight
   v) Lifecycle advice – modifying diet and exercise
   vi) Reducing weight
   vii) GnRH analogue with hormone replacement therapy

   To treat hirsutism / androgenic features
   i) Eflornithine ereain topical application
   ii) Cyproterone acetate (contraception pill which has antiandrogen symptoms)
   iii) Laser or electrolysis



Ancanthosis Nigricans – areas of increased puberty skin pigmentation occur in axillae and other flexure

Long term risk associated:
Type 2 diabetes mellitus
Cardiovascular risk factors.

Q.7: A 25year old woman presents with symptoms of mood swings, fatigue and bloating that occur a week before her menstrual period and improves shortly after it. She reports it is affecting her quality of life. Her physical examination and blood tests are unremarkable.

a) What is the most like diagnosis?
Premenstrual syndrome (PMS)

b) How will you manage PMS?
History:

- Bloating
- Eye weight gain
- Mastalgia
- Fatigue
- Headache
- Depression
- Irritability

- Cyclical nature of symptoms is corner stone of diagnosis.
- Symptom chart filled by patients helps reach the diagnosis.

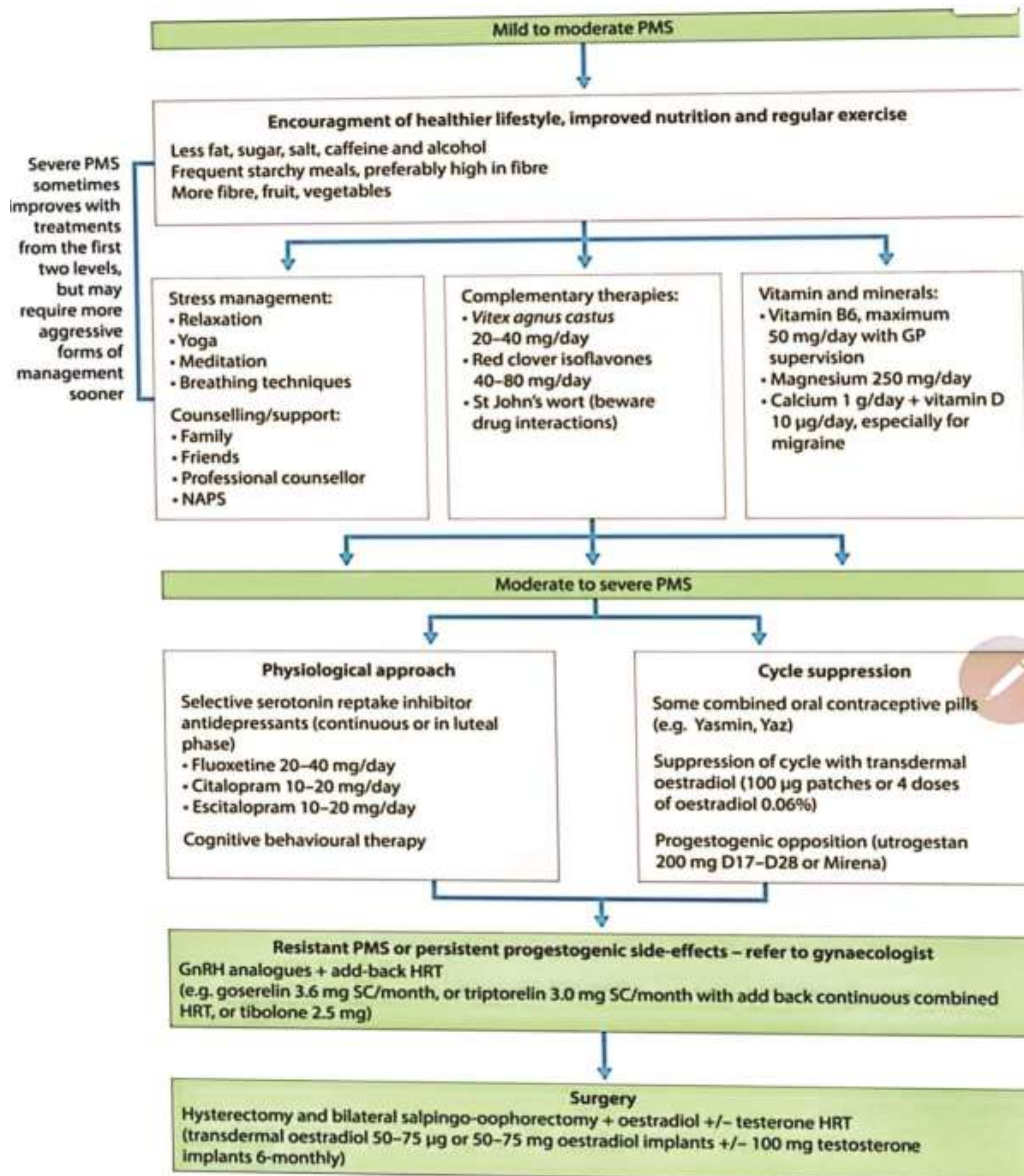
Management:
Simple measures: Stress reduction
Limiting alcohol and effective exercise

Medical Treatment:

- Bicycling or tricycling of combined oral hormonal contraceptive pills.
- Use of transdermal estrogen – by overcoming the fluctuation of normal cycle.
- GnRH analogues – is very efficient treatment but long term use in associated with osteoporosis, needs to have hormone replacement therapy concurrent administration.

- Use of selective serotonin re-uptake inhibitor SSRT's.
- Hysterectomy + bilateral salpingoophorectomy as last resort – needs to have trial of GnRH analogue as test to ensure that switching off ovarian function will in need cure the disease.
- Vitamins as B6, calcium and isoflavones can help.
- St. Thon's Wort evening primrose oil

  Cognitive behavioral therapy CBT



Q.8: How to manage heavy menstrual bleeding?

Heavy menstrual bleeding:

It is defined as excessive menstrual blood loss more than 80 ml per period.

Inter menstrual bleeding:

It is defined as bleeding in between the periods.

Post coital bleeding:

It is defined as bleeding after inter course.

Post Menopause bleeding:

It is defined as bleeding after more than 1 year of cessation of menstruation.

History:

- Last menstrual period
- Regularly of cycle
- Amount of blood lost
- Any signs and symptoms of anemia like shortness of breath, chest pain, palpitations, dizziness, fatigue.
- Any recent change in cycle are associated with menarche
- Any pressure symptoms like urinary frequency urgency, incontinence, any symptoms like contraception.

Signs & symptoms of malignancy, metastasis, like involvement of lungs, liver, peritoneal organs.

Examination:

- Blood pressure
- Pulse
- Respiratory rate
- Temperature
- Anemia – Pallor
- Cyanosis
- Clubbing
- Lymph nodes

Local examination:

Abdominal speculum and bimanual examination with consent and chaperone to assist for :

- Uterine size, mobility, tenderness
- Adenexa
- Any other gynaecological or non-gynaecological masses in pelvis or lower abdomen

Investigations:

- FBC – to look for haemoglobin, platelets coagulation screen – particularly if since menarche heavy cycles to rule out coagulation disorders.
- No need to perform testing of hormones
- Pelvic ultrasound for
  morphology of uterus and adnexae endometrial thickness

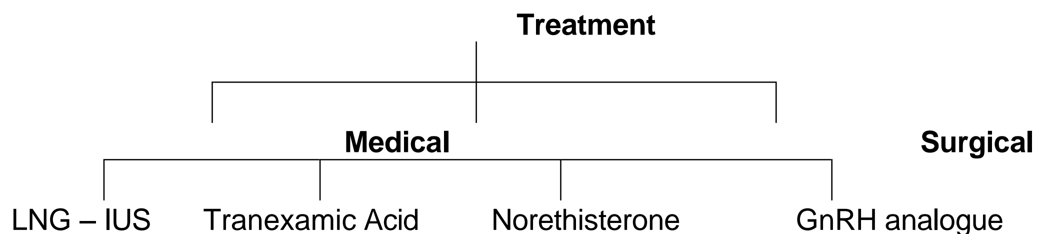
- High vaginal or endocervical squids
- Endometrial biopsy of:
    - 45 years
    - Failure of treatment
    - Risk factors for endometrial pathology
- Thyroid function tests – of history suggestive of disorders of thyroid.

Out patient hysteroscopy

- If on TV-USS there is pathology correctable by hysteroscopy
- If ultrasound is inconclusive for exact location of fibroid.
- For directed endometrial biopsies.

Factors affecting patient preference for treatment

- Age
- Fertility wishes
- Risk and benefits of each option
- Patients preference for particular option
- Medical and surgical history of patient



↓

For women who do not want to conceive
95% ↓ in blood loss few side effect
Not suitable for women who want to conceive

Reduce blood loss by 50% in antifibrolytic
Mefenamic acid – inhibit prostaglandin synthesis
- ↓ blood loss 30%

COCP – decrease amount of blood loss

Norethisterone – 15mg daily
- From day 6 – 26 of menstrual cycle,
- Help improve symptoms

GnRH analogue – Stop production of estrogen by acting on pituitary
- cause hypoestrogenic state
- ↑ risk of esteopososis
- may ↓ size of fibroid pre-surgery
- help improve haemoglobin

Surgical

Endometrial ablation	Uterine artery embolization	Myomectomy	Hysterectomy
↓ Impedance controlled ablation Thermal uterine balloon therapy Micro wave ablation	Not suggested If fertility concern Transcervical resection Of fibroid. ↓ - Less invasive - Can conceive	- Fertility preserved - Risk of reasons	↓ Not fertility

Pre-requisites

- Uterus not bigger than 10 weeks size
- Fibroid less than 3 cm
- 40% reduction in blood loss
- 40% amenorrhea
- 20% no change

Q.9: A 20 years old women presents with severe revamping lower abdominal pain during her menstrual periods, starting a day before per periods and lasts for 2-3 days. She reports that pain is affecting her quality of life. She has no significant medical history and has an unremarkable physical examination. She has used over the ocular particulars which give minimal relief.

i) What is the most likely diagnosis?
   Dysmenorrhea
ii) What are the types of dysmenorrhea?
   Primary – painful period since menarche
   - It is unlikely associated with other pathologies
   Secondary – painful period that have developed over time and usually have a secondary cause
iii) How will you manage?
   History and examination
   1) Assess timing & severity of pain.
   2) Its relation with menstrual cycle.
   3) Any relief with taking painkillers
   4) T4 it affecting quality of life.

- Any associated nauseas and vomiting (which could be due to release of prostaglandins)
- Any associated dyspareunia, AUB

Examination:

- Enlarged uterus – fibroid
- Fixed uterus – endometriosis
- Endometriotic nodules
- Abnormal discharge – PID

Investigations:

- High vaginal swab
- Endocervical swab
- Trans vaginal ultrasound
- Diagnostic laparoscopy
- Ultrasound guided hysteroscopy if history suggestive to stenosis of cervix.

Management:

- Non-steroidal anti-inflammatory drugs
- Combine oral contraceptive
- Progestogens – oral (desogestrol)
- Parentral medroxy progesterone)
- LNG – IUS
- Changes in lifestyle low fact, vegetarian diet
- Heat
- GnRH analogue
  To assess benefit from hysterectomy when awaiting hysterectomy
- Surgery
  Laparoscopy for adhesiolysis treatment of endometriosis of endometrioma.

Q.10: A 19 years old female presents to Accident & Emergency with complaint of lower abdominal pain and vaginal spotting. She has an amenorrhea of 8 weeks. Her observations are blood pressure of 100/60 mmHg, heart rate of 110 bpm with respiratory rate of 14 bpm. Examination revealed a tender lower abdomen with adnexal mass felt in left adnexae? Speculum examination with consent and chaperone showed closed cervical os.

a) What are the possible differential diagnosis?

i) Threatened miscarriage
ii) Ectopic pregnancy

b) Enlist the investigations you would like to have and why?

i) Group & Share – To assess Rh status as patient is coming with pain and bleeding

Many need Anti D if Rh negative

FBC full blood count: To see haemoglobic platelets.

βhCG to confirm pregnancy and for hairline
In case serial measures needed.

Ultrasound pelvis
To see uterus
adnexae
locate the pregnancy

ii) Treatment options for ectopic pregnancy depends on site of ectopic pregnancy findings on the ultrasound.

Ureter intact or ruptured

Fetal cardiac activity status

Diameter of Gestational sac

Serum βHCG level

Patient preference

Any previous salpingectomy

Expectant: If patient stable haemodynamication

- If pregnancy resolving on its own
- Patient waiting for follow up till HCG negative.

Medical management:

Pre-requisites

Patient with minimal symptoms

Adnexal mass <40mm in diameter

Current serum HCG < 3,000 IO/L

Drug used

Methotrexate I/M 50mg/m^2

Follow up

Day 4, 7, 11 than weekly until undetectable

Contraindication

Chronic liver, renal, haematological disorder

Active infection

Immunodeficiency

Breast feeding

Side effects

Stematitis

Conjunctivitis

Gastrointestinal upset

Photosensitive kin

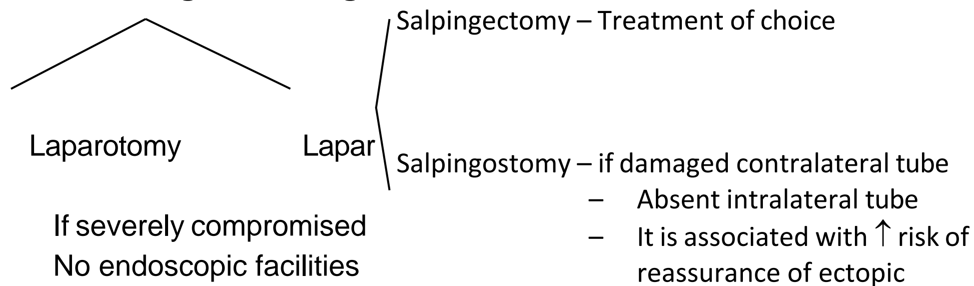
Advise

Avoid sexual intercourse

Avoid conception for 3 months

Avoid alcohol and prolonged sunlight exposure

Surgical Management



Q.11: A years old female

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a) Only family history of chromosomal
Cousin marriage

Examination

General Physical Examination:

Blood pressure Pallor
Pulse Jaundice
Respiratory rate Cyanosis
Temperature Clubbing
Edema

Local Examination

With consent chaperone

Speculum Examination

Cervix

Vulva & vagina

Bimanual Examination

Uterus size, morphology, tenderness adenexae

Investigations

1. Testing for antiphospholipids

   Anticardiolipin and lupus anticoagulation antibodies

   Preferably after pregnancy two test apart

2. Glycogenetic analysis of products of conception to identify on unbalanced structural drain abnormality.
   - Any family history of chromosomal abnormalities
   - Cousin marriage

Examination

General Physical Examination:

Blood pressure   Pallor
Pulse   Jaundice
Respiratory rate   Cyanosis
Temperature   Clubbing
Edema

Local Examination

With consent chaperone

Speculum Examination

Cervix

Vulva & vagina

Bimanual Examination

Uterus size, morphology, tenderness adenexae

Investigations

1. Testing for antiphospholipids
   Anticardiolipin and lupus and antibodies
   Preferably after pregnancy two test minimum apart
2. Glycogenetic analysis of products of conception to identify on unbalanced structural chromosomal abnormality.
3. Paternal peripheral blood karyotype of both partners.

Treatment Options

Aspirin   Can reduce rate of miscarriage in APS by 50%

How dose heparin

Pre-implantation genetic diagnosis or for balanced translocation

Surgical treatment for   (1) congenital uterine abnormality e.g. uterine septam

(2) Cervical in competence

Although treatment with metformin, corticosteroid, progesterone is given but insufficient evidence to recommend their use of present.

Mostly couples have normal investigations need psychological support and serial ultrasound in several non-randomized studies.

Q.12: Approach case of miscarriage

Amenorrhea
Bleeding vaginally
Lower abdominal pain
Ultrasound showing intrauterine pregnancy

	Fetal heart	**Clinical presentation**
Delayed miscarriage	-ve	No abdominal pain or bleeding diagnosed on scan cervical os
Threatened miscarriage	+ve	With abdominal pain and bleeding Cervical os open
Inevitable miscarriage	-ve	With abdominal pain and bleeding products of conception in cervical os
Complete miscarriage	No product of conception in uterine cavity	Pain and bleeding settled Cervical os closed
Incomplete miscarriage	Product of conception on scan	Bleeding & pain can vary from minimal to heavy

Discuss the medical and surgical management of miscarriage

Medical

- Use of progesterone antagonist – Mifepristone if over 9 weeks of gestation.
- Prostaglandin E analogue - Misprostol

Side effect

- Pain
- Vomiting
- Diarrhoea

Offered pain relief and anti-emetics

Post termination

- Up↑ in 3 weeks
  If any heavy bleeding, discharge, fever requested to visit hospital

Problems associated:

- 10% failure rate
- Heavy bleeding

Surgical Management

Indications

- Persistent excessive bleeding
- Haemodynamic instability
- If patient chose this as an option

Options

MVA

Surgical management of miscarriage under general anaesthesia i.e. suction curettage

Complications:

- Risk of cervical trauma
- Later on cervical incompetence
- Post operative pelvic infection
- Uterine perforation

Counselling:

- Psychological support is very important aspect of care.
- Patient should be counseled that mostly miscarriages are non-recurrent
- It is important to let them know that they are not responsible for the loss.

Q.13 A 26 year old female P2 last born child 2 years presents in gynae out patient department regarding her concerns that she can be pregnant. She was day 10 after her regular menstrual cycle of 28 days when she missed 2 pills from the combined hormonal contraception she was using.

a) What is the failure rate of combined hormonal contraception?

Typical use 9% (Table 6.1)

Perfect use 0.3%

b) What advice she needs regarding missed pill to avoid concepting as she does not plan to have a pregnancy?

- Take the recent missed pill at earliest possibly.
- Continue taking pills as per routine use at routine time.
- Avoid intercourse or use condoms until has taken seven consecutive pills.
- If she had unprotected intercourse in first week of taking pill needs to have emergency contraception.

Table 6.3: Drugs known to decrease efficacy of hormonal contraception through inducting of Oliver enzymes (oral contraceptive pills, patch, ring and implant.

Types of drug	Liver enzyme induction
Anticonvulsant	• Carbamazepine • Eslicarbazepine • Oxcarbazepine • Phenobarbital • Phenytoin • Primidone • Topiramate
Antibiotic	• Rifampicin • Rifabutin
Anti-fungal	• Griseofulvin • Protease inhibitors: • Amprenavir • Atazanavir • Nelfinavir • Lopinavir
Anti-retroviral	• Saquinavir • Ritonavir • Non-nucleoside reverse transcriptase inhibitors: • Efavirenz • Nevirapine

c) What is medical eligibility criteria?
It is a guidance document that contains recommendations for whether or not women with given medical conditions are eligible to use a particular contraceptive method base on evidence and also experts consensus opinion.

Table 6.2A Medical eligibility Criteria (Modified from WHO)

MEC Category	Definition of Category
1.	A condition for which there is no restriction for the use of the contraceptive method
2.	A condition where the advantages of the method generally outweigh the theoretical or proven risks
3.	A condition where the theoretical or proven risks generally outweigh the advantages of using the method The Provision of a method requires expert clinical judgment and / or referral to a specialist contraceptive provider, since use of the method is not usually recommended unless other more appropriate method are not available or not acceptable
4.	A condition that represent s an unacceptable health risk if the contraceptive method is used.

Table 6.2 B: Examples of WHO medical eligibility criteria category 4 conditions and use of combined hormonal contraception.

- Age > 35 and smoking
- Blood pressure > 60/100 mmHg
- Hypertension with vascular disease
- Deep vein thrombosis, current or past
- Myocardial infarction, current or past
- Cerebrovascular accident, current or past
- Multiple serious risk factors for cardiovascular disease
- Know chromogenic mutations
- Current breast cancer

d) Enlist the non-contraceptive benefits of hormonal contraception.
Table 6.4

Table 6.4 Non Contraceptive health benefits of hormonal contraception

Method	Benefit against
LNG-IUS (52 mg)	Heavy menstrual bleeding endometriosis adenomyosis dysmenorrhea Endometrial protection simple hyperplasia
Combined hormonal contraception	Heavy Menstrual bleeding irregular menses Hirsutism Acne Premenstrual syndrome Reduces risk of ovarian cancer Reduces risk of endometrial cancer
Progestrogen only injectable (depot medroxyprogesterone acetate)	Heavy menstrual bleeding endometriosis dysmenorrhea

e) Common side effects of hormonal methods of contraception.
- Unexpected bleeding
- Weight gain
- Mood swing
- Libido
- Headache

Combined Hormonal Contraception

Inhibits ovulation via negative feedback of estrogen progesterone on the pituitary with supervision of FSH and LH.

Pills	Patch	Ring
Low dose		
15-35 μg ethinyl estradiol		
Progesterons		
2nd generation – levo norgesterol, nor ethisterone 3rd generation – gestodine desogesterol 4th generation – drosperinone, dienogest		
3rd & 4th generation progesterone have less androgenic activity but high risk of venous thrombosis than 2nd generation progesterone Usually mono phasic.		
33.9 μg ethinyl estradiol /day 203 μg/day nor elgesteronin ↓ Skin of lower abdomen, buttock, arm for 7 days year 3 7 days hormone free	54 mm diameter 15 μg/day ethinylestradiol 120 μg etonorgesterol daily	
	Ring in vagina for 21 days 7 day hormone free interval	

Risk of cancers and VTE among COCP users.

- 12% reduction in risk of any cancer
- Reduced risk of Colorectal
Endometrial
Ovarian cancer
- Risk of cervical cancer and breast cancer is increased
- Increases the risk of both arterial and venous thrombosis

If one pill has been missed (more than 24 hours and up to 48 hours late)

↓

Continuing contraceptive cover

The missed pill should be taken as soon as it is remembered

The remaining pills should be continued at the usual time

↓

Minimizing the risk of pregnancy

Emergency contraception (EC) is not usually required but may need to be considered if pills have been missed earlier in the packet or in the last week of the previous packet

If two or more pills have been missed (more than 48 hours late)

↓

Continuing contraceptive cover

The most recent missed pill should be taken as soon as possible

The remaining pills should be continued at the usual time

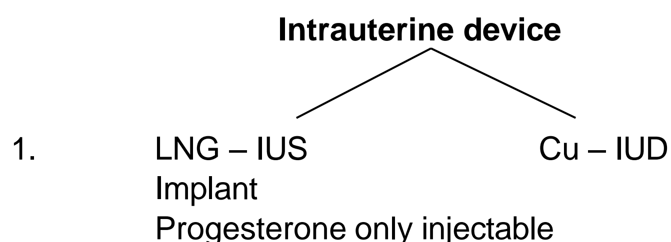
Condoms should be used or sex avoided until seven consecutive active pills have been taken. This advice may be overcautious in the second and third weeks, but the advice is a backup in the event that further pills are missed

↓

Minimizing the risk of pregnancy		
If pills are missed in the first week (pills 1–7)	If pills are missed in the second week (pills 8–14)	If pills are missed in the third week (pills 15–21)
EC should be considered if unprotected sex occurred in the pill-free interval or in the first week of pill taking	No indication for EC if the pills in the preceding 7 days have been taken consistently and correctly (assuming the pills thereafter are taken correctly and additional contraceptive precautions are used)	OMIT THE PILL-FREE INTERVAL by finishing the pills in the current pack (or discarding any placebo tablets) and starting a new pack the next day

Q.14 A 35 years old women is present to gynae outpatient department for discussion around contraception she is looking towards methods that are long term and require minimal maintenance. She has no significant medical or surgical history and no known drug allergies. Her menstrual cycle is regular with no dysmenorrhea.

f) What are some long acting reversible contraception options?



g) What is mode of action for Cu IUD?

Cupper initiates an inflammatory process in the womb collecting leucocytes, macrophages, prostaglandins. They are toxic to both egg and sperm and interfere with transport of sperm. It also helps inhibit implantation.

h) What are complications associated with an IUD?

1) Perforation 1 in 1000

   Pulse ↑ if in experienced clinician
   Breast feeding
   Less than 6 months postpartum

2) Expulsion 1 in 20 expelled in first 3 months

   Perform regular self-chicks for presence of thread

3) Infection

   Over risk in first 3 weeks / in 100
   If any signs & symptoms of infection it is better to remove the IUD and take antibiotics.

4) Missing threads

   If threads is missing speculum examination – to visualize threads or ultrasound – to confirm correct position in uterus

i) If patient conceives with CU IUD in place?

Overall risk of ectopic is reduced as compared to women using no contraception but if pregnancy occurs with CU IUD in place risk of ectopic is higher.

- Advisable to remove <12 weeks of gestation
- If device left in situ there is increased risk of
  miscarriage
  Preterm deliver
  Septic abortion
  Chorioamnionitis

Q.15 A 30 years old female P3 presents in gynae outpatient department requesting laparoscopic sterilization.

a) What advice should be given to the women considering sterilization?

- Irreversible nature of the method
- Failure rate 1:200 for laparoscopic sterilization
  1:500 for hysteroscopic sterilization
- 1:1000 risk of trauma to sand, bladder, blood vessel
- Vasectomy is safe and quick
- More female regret it if age <30 years nulliparous recent pregnancy
- No SIT protection
- ↑ risk of ectopic pregnancy if failure of sterilization
- Reversal is not NHS funded and needs special expertise

b) How long it takes for female sterilization to be effective?
   - Untill the menstrual period after laparoscopic sterilization
   - If hysteroscopic sterilization needs 3 months it to be effective

c) What increases the risks associated with laparoscopic sterilization?
   - ↑ BMI
   - Previous surgeries abdominally

d) What is used for hysteroscopic sterilization?
   Microinerts (Essure)
   - Springs made of titanium, steel, nickel containing dacron fibers

Q.16 A 28 year P1 old female presented to accident and emergency after an unproceeded sexual intercourse after a party 4 days ago. She is concerned about she will conceive and is requesting emergency contraception. Her last menstrual period was 10 days ago. She has no significant medical or surgical history and allergies to appear. Past baby is 7 months old.

a) Will Lactational ammenorrhoea affect her chances of getting pregnant?
   No cause it is only working
   - Within first 6 months
   - Amenorrhea
   - Exclusive breast feeding

b) What is most suitable method of emergency contraception for her?
   Asking on time since last episode of unprotected intercourse and allergy to copper. The most suitable caption is Ulipristal acetate 30 mg.

c) What is mechanism of action of oral progress as emergency contraceptive?
   - Delay ovulation - so that sperms alive in giving tract loose their ability to fertilize
   - If only present 2/3rd of pregnancies
   - Progesterone's are less effective than CU IUD

d) What adverse needs to be given to the patient?
   - To choose suitable contraceptive according to her fertility wishes.
   - Give a formation about long acting contraception

Implanon
LNG IUS
CUIUD
Depomedroxy progesterone injection.

Q.17 A 16 year old girl presents to early pregnancy for termination of pregnancy.

a) What is legal ground for pregnancy termination?
   Pregnancy has not exceeded its 24th week and continuance of pregnancy would involve risk of greater than if pregnancy were terminated, of injury to physical or mental health of pregnant woman.

   Table 6.8

b) What are factors which influence method of choice for termination of pregnancy?
   i) Gestational age
   ii) Medical history of patient
   iii) Females choice
   iv) Skills of doctor

c) How medical termination works of patient is 10 weeks into her pregnancy?
   - Mifeprostone – progesterone receptor modulator followed 24 – 48 hrs by Misoprostol. Prostaglandin analogue
   - Needs hospital admission due to discomfort heavier bleeding and passing a large fetus means patient may need extra support.

d) At what gestation is gestation is feticide advised?
   After 21 weeks and 6 days RCOG suggests women undergoing medical abortion feticide should be utilized as method to avoid baby inhibiting signs of life.

Q.18 A 32 year old male presents with subfertility after couple has tried conceiving for 2 years upralketed sexual inter course.

a) What is the investigation of choice to investigate male subfertility?
   Semen fluid analysis (SFA)
b) What are pre-requisites for obtaining sample?
   Abstinence for 2-4 days.
c) What are normal parameters for semen analysis?

Table 7.2: World Health Organization parameters for semen analysis – 5th centile

Parameter	Lower and reference limit
Semen volume (ml)	1.5 (1.4-1.7)
Sperm concentration (million/ml)	15 (12-16)
Total sperm number (million per ejaculate)	39 (33-46)
Progressive motility (%)	32 (31-34)
Morphology normal forms (%)	4 (3-4)
Vitality – live sperm (%)	58 (55-63)
pH	>7.2

Q.19 A couple visits the fertility alive after typing to conceive for more than two years without any success. Female is 28 years and male 30 years with AMI 25-29 in both partners and no other significant of medical or surgical history. They do not smoker or as what are causes of female subfertility?

a) What are causes of female subfertility?
b) Enlist management options for the coupler's infertility?

Part (a)

1) Ovulatory causes
   Problems at ovary – PCOS polycystic ovarian syndrome
   Hypothalmic hypogonadism – Kallman syndrome
   Problem at pituitary – Hyper prolactinemia
   Endocrine abnormalities – thyroid disease
2) Tubal problems
   Pelvic inflammatory disease
   Endometriosis
   Chlamydial infection
   Previous surgery abdominal or pelvic
3) Uterine problem
   Fibroids – depend on size location
   - Submucosal fibroids impact fertility
   - Intramural fibroid >5cm impact fertility
   - Subserosal fibroid have little impact

   Endometrial polyp reduce chances of implantation
   Asherman's syndrome

c) Management options
   Take history and examination of both partner
   Female investigations
   Level of AMH
   LH
   FSH
   Midluteal progesterone
   Thyroid function test
   Prolactin
   Testosterone
   Chlamydia test
   If considering ART – HIV, Hepatitis B, Hepatitis C

   IV – ultrasound for morphology of uterus
   Any fibroid
   Ovarian size, shape, morphology
   Antral follicle count
   Hydrosalpinges
   Endometriosis

Tubal assessment

Hysterosalpingography
Hysterocontrast synography
3D Hysterocontrast synography

Management

Ovulation induction

Medical Clomiphene citrate
Aromatase inhibitions

Surgical Laparoscopic ovarian drilling to treat underlying cause like:

Myomectomy – fibroid
Cystectomy – endometriosis
Tubal surgery – blocked tube
Operative laparoscopy to treat adhesions

Intra-uterine insemination

In vitro fertilization

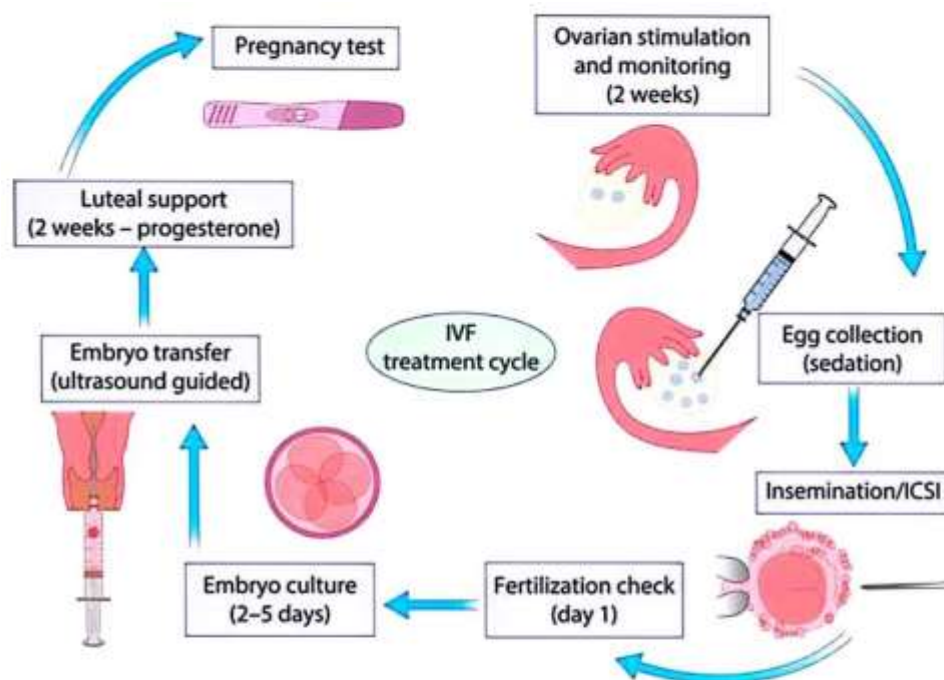


Fig 7.5: In vitro fertilization

Discuss briefly fertility preservation options

1. Embryo cryopreservation
2. Freeze the oocytes
3. Laparoscopic ovarian cortex collection cryopreservation

Q.20 A 35 years old women presented in gynae outpatient department with C/o amenorrhea for 1 year, night sweat that flushes and serum FSH more than 40. She is here to discuss her options and causes by her symptoms.

a) Define menopause?
   Menopause is defined as woman's final menstrual period and the accepted confirmation of this made retrospectively after 1 year of ammenorrhoea.
b) Define premature ovarian insufficiency? (POI)
   Also called as pre-mature ovarian failure is early cessation of periods 1% of women less than 40 years and 0.1% less than 30 years.
c) Enlist causes of POI

   Table 8.2

d) What are the short term and long term effects of menopause on women health?

   Table 8.3

Q.21 A 55 years old female presents in the menopausal clinic to discuss about hormone replacement therapy to relieve her symptoms of hot flushes and nigh sweats. On inquiry she reveals to have had treatment for hormone receptor positive breast cancer and personal history of VTE. You explain HRT is not suitable but she is keen to explore non-hormonal options.

a) Enlist the alternative and complementary treatment?

b) **Table 8.5:** Alternative and complementary treatments

Complementary drug-free therapies (delivered by a practitioner)	Acupuncture reflexology Magnetism Reiki Hypnotism
Herbal/ natural preparations (Designed to be ingested)	Black cohosh (Actaea racemosa) Dong quai (Angelica sinensis) Evening primrose oil (Oenothera biennis) Ginkgo (Ginkgo biloba) Ginseng (Panax ginseng) Kava kava (Piper methysticum) St John's wort (Hypericum perforatum)
Natural hormones (designed to be ingested or applied to the skin)	Phytoestrogens such as isoflavones and red clover Dehydroepiandrosterone (DHEA)

c) What are options available for vasomotor symptoms which are non-hormonal?

Table 8.6 Non hormonal treatments for vasomotor symptoms	
Alpha –adrenergic agonists	Clonidine
Beta-blockers	Propanolol
Modulators of central neurotransmission	Venlafaxine Fluxetine Paroxetine Citalopram Gabapentin

d) What are various life style options?

Table 8.4: Beneficial effects of various lifestyle changes in postmenopausal women

Stopping smoking	• **Prevention of lung cancer** • **Reduction of CVD** • **Beneficial effects on bone loss**
Reducing alcohol consumption	• Reduction of calorie intake • Fewer, less severe vasomotor symptoms • Beneficial effects on bone loss • Prevention of alcohol related liver damage • Reduction in incidence of breast cancer • Reduction of CVD
Normal BMI	• Reduction of calorie intake • Fewer, less severe vasomotor symptoms • Beneficial effects on bone loss • Reduction in incidence of breast cancer • Reduction in incidence of endometrial cancer • Reduction of CVD

Q.22 A consultation as going on in a post-menopausal where a 55 year old female is attending to ask questions about HRT. Kindly answer the concerns.

a) Enlist hormones used in HRT

Hormones used in HRT
Oestrogens: • Oestradiol (the main physiological oestrogen) • Oestrone sulphate • Oestriol • Conjugated equine oestrogen **Progestogens:** • Norethisterone • Levonorgestrel • Dydrogesterone • Medroxyprogesterone acetate • Drospirenone • Micronized progesterone

b) Key benefits of HRT

Key benefits of HRT
Oestrogens: • Symptoms improved • Vasomotor symptoms • Sleep patterns **Performance during the day** • Prevention of osteoporosis • Increased bone mineral density • Reduced incidence of fragility fractures • Lower genital tract • Dryness • Soreness • Dyspareunia • CVD: preventive effect if stated early in menopause

Absolute contraindications:

- Suspected pregnancy
- Breast cancer
- Endometrial cancer
- Active liver disease
- Uncontrolled hypertension
- Known current venous thromboembolism (VTE);
- Known thrombophilia (e.g. Factor V Leiden);
- Otosclerosis.

Relative contraindications

- Uninvestigated abnormal bleeding
- Large uterine fibroids;
- Past history of benign breast disease
- Unconfirmed personal history or a strong family history of VTE
- Chronic stable liver disease
- Migraine with aura.

Side effects associated with estrogen:

- **Breast tenderness or swelling**
- **Nausea**
- **Leg cramps**
- **Headaches**

Side effects associated with progestogen

- **Fluid retention**
- **Breast tenderness**
- **Headaches**
- **Mood swings**
- **Depression**
- **Acne**

c) Contraindication of HRT

d) S/E associated with estrogen

e) S/E associated with progesterone

Q.23 A 30 years old female presents with excessive vaginal discharge which as white is color. Fishy odor, thin in consistency. She P1 with history of pre-term birth at 36 weeks of gestation in last pregnancy.

a) What is the most likely diagnosis?
   - Bacterial vaginosis
b) What is Amsels criteria?
   - Homogenous discharge
   - High pH
   - Clue cells on microscopy
   - Fishy odour when 10% potassium hydroxide is added to the sample.
   - For fulfillment of Amsel's criteria 3 out of 4 criteria must be present.
c) Risk factors for bacterial vaginosis?
   - Douching
   - Black race
   - Smoking
   - New sexual parlor
   - Receiving oral sex
d) Predominant organism
   Gardnerella vaginallis
e) How do you diagnosis bacterial vaginosis?
   - Hay Ison or Nugent criteria
   - Amsel criteria
f) What risks are increased with bacterial vaginosis?
   - Pelvic inflammatory disease
   - Post hysterectomy vaginal cuff cellulitis
   - Preterm birth
   - Rupture of membranes
   - Miscarriage
   - ↑risk of HIV acquisition
g) What are treatment options?
   - Metronidazole
   - Clindamycin
   - Advise women to avoid vaginal douching or excessive genital washing.

Q.24 A 14 years old girl present to gynae outpatient department with complaint of mucopurulent vaginal discharge. Her high vaginal swab shows gram negative ingtracellular diplococci.

a) What is the most likely causative organism?
   Neiseria Gonorrhoea
b) How will you manage this infection?
   - Asymptomatic in upto 50%
   - Altered vaginal discharge
   - Lower abdominal pain in upto 25%

Sexually transmitted infection

Examination
- Cervicitis
- Mucopurulent discharge
- PID
- Disseminated gonococcal infection
- Purpuric non-blanching rash
- Arthralgia or arthritis (mono articular)
- Ophthalmic infection
- Neonatal infection

Investigations
- NAAT – Nucleic acid amplification test
- Culture and sensitivity
- Screening for other STI

Treatment
- Parenteral third generation cephalosporin
- Plus azithromycin

Q.25 A 24 years old females presents to gynae outpatient department after 2 weeks of laparoscopy for ectopic pregnancy. She sexually active and has had complains of altered vaginal discharge in the past. She is concerned regarding her future pregnancies.

a) What is the most likely cause?
   - Chlamydial infection
   - Most common in women less than 25 years
b) Stow will you manage?
   - Often asymptomatic
   - Subclinical PID
   - Subsequent complications e.g ectopic pregnancy
   - Inter-menstrual, post coital bleeding
   - Abdominal pain

Examination
- Cervicitis
- Mucopurulent discharge
- Neonates born to mothers can have conjuctivitis

Investigations
- NAAT – Nucleic acid amplification test

Treatment
- Azithromycin
- Doxycycline
- Important is to treat simultaneous and recent sexual partners.

Q.26 A 30 years old female presents to accident and emergency department with high grade fever, tachycardia, and severe lower abdominal pain. She has had vaginal discharge mucopurulent over last week and still suffering from it. On ultrasound 8x8 cm left tuboovarian mass noted.

a) What is the most likely diagnosis?
   - Pelvic inflammatory disease
b) What are the most common causative organisms?
   - N. Gonorrhea
   - Chlamydia trachomatis
   - Mycoplasma genitalium
c) How will you manage?

   Sign & Symptoms
   - Lower abdominal pain
   - Dyspareunia
   - Altered vaginal discharge
   - Inter menstrual bleeding
   - Post coital bleeding

Examination
- Tender abdomen
- Cervical motion tenderness
- Cervicitis

Investigations
- Testing for sexually transmitted infections
- Exclusion of pregnancy

Treatment
- Empirical treatment started as soon as possible
- Neonatal or tetracycline + metronidazole with parenteral 3rd generation cephalosporin at start
- Treatment of sexual partners – usually with azithromycin

Sequele:
- Sub-fertility
- Ectopic pregnancy
- Chronic pelvic pain
- Right upper quadrant pain
- Peri-hepatitis
- Fitz high Curtis syndrome

* If an intrauterine device in place:
  It is advice able to remove IUD, keeping in mind the risk of pregnancy if history suggestive of unprotected intercourse in the last seven days.

Q.27 A 25 years old woman presents to the clinic with a painless sore on her vulva that she notice about two weeks ago. She reports no fever, rash or other symptoms. She has history of multiple sexual partner. On examination there is a solitary ulcer with a clean base, raised edges. Bilateral inguinal lymphadenopathy is noted but the lymph nodes are non-tender.

a) What is the most likely diagnosis?
   - Symphilis
b) What investigations you would like to required?
   - Serology ± directly detecting treponema palliclue
   - Usually by → dark field microscopy
     → PCR
   - Non-treponemal serological test
   - Rapid plasma reagin
   - Venereal Disease Reference Laboratory
   - EIA/CLIA Enzyme or chemiluminescence immunoassays
   - TDPA/TPHA Treponema Pallidum particle or haemogglutination assays
   - If negative in very stages of disease repeat 4-6 weeks later.
   - Serological tests may be positive for life.
c) What would be the most suitable treatment
   - Depot preparation of penicillin
   - Simultaneous treatment of current sexual partners
   - Tracing and testing previous partners is recommended where applicable children is also needed

Chancore:
- Painless lesion
- Occus at exposure site
- Indurale and exudes
- Regional lymphadenopathy

Condylomata lata
- Wide spread erythematous rash
- Alopecia
- Oral and genital mucous lesions

Late complications of syphilis:
1) Gummatous lesion – skin bone
2) Cardiovascular involvement – ascending aorta
   Cardiovascular involvement –aortic valve in competence
3) Neurological involvement
   - Meningovascular disease
   - Tabes dorsalis
   - Dementing illness
   - General paresis

Q.28: A 60 years old female present to Gynae outpatient department with complaint of leaking urine with coughing and sneezing. No associated complain of urinary urgency, frequency, urge incontinence nocturia.

a) What is the most likely diagnosis?
   - Stress incontinence

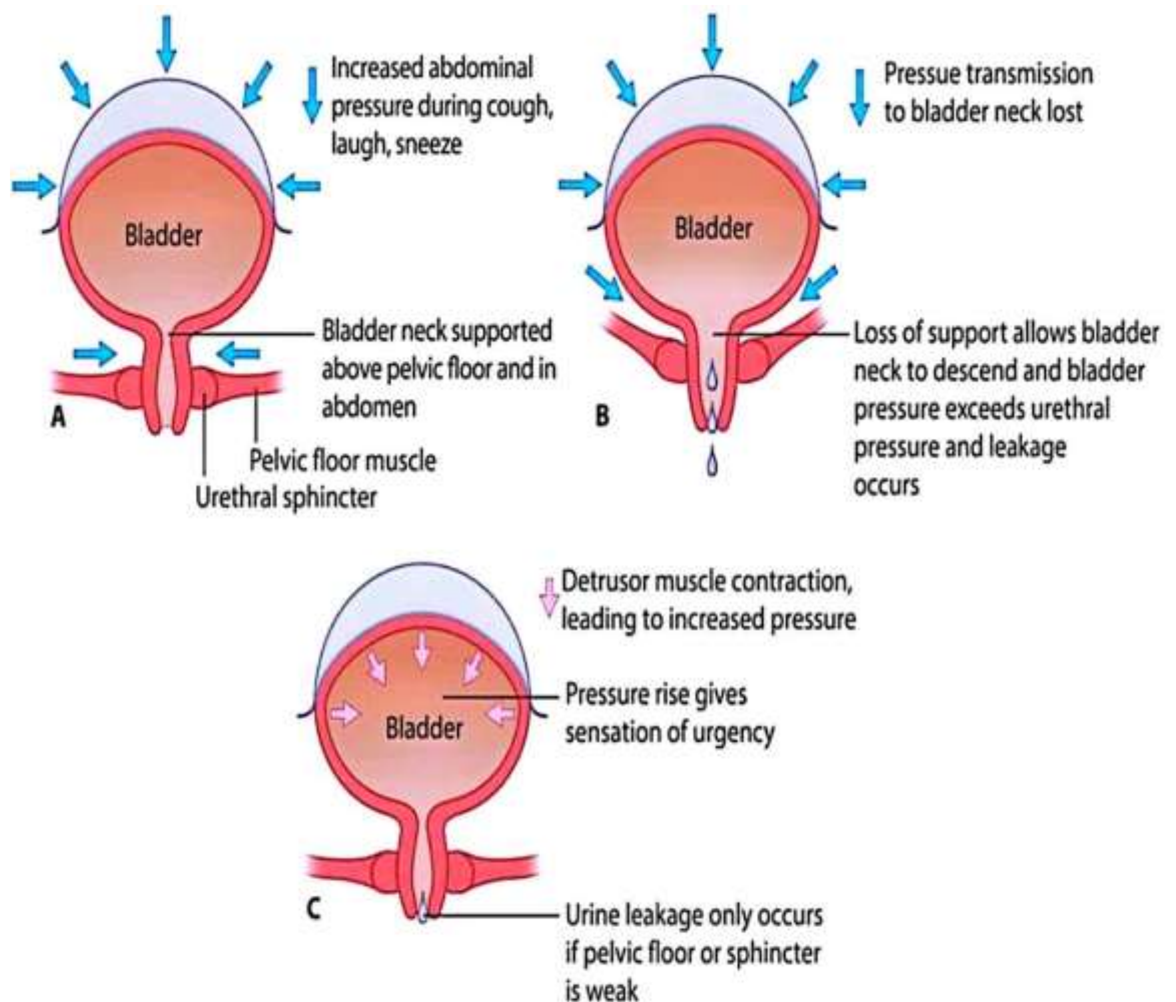
b) What is the most likely underlying mechanism causing in continence?

1) Hypermobility causes weakness of urethral sphincter and the abdominal pressure transmitted to the urethra leaking urine.

2) Intrinsic sphincter deficiency is due to weakness of sphincters muscle.

c) What are risk factors associated with the condition?

d) Discuss the treatment options?



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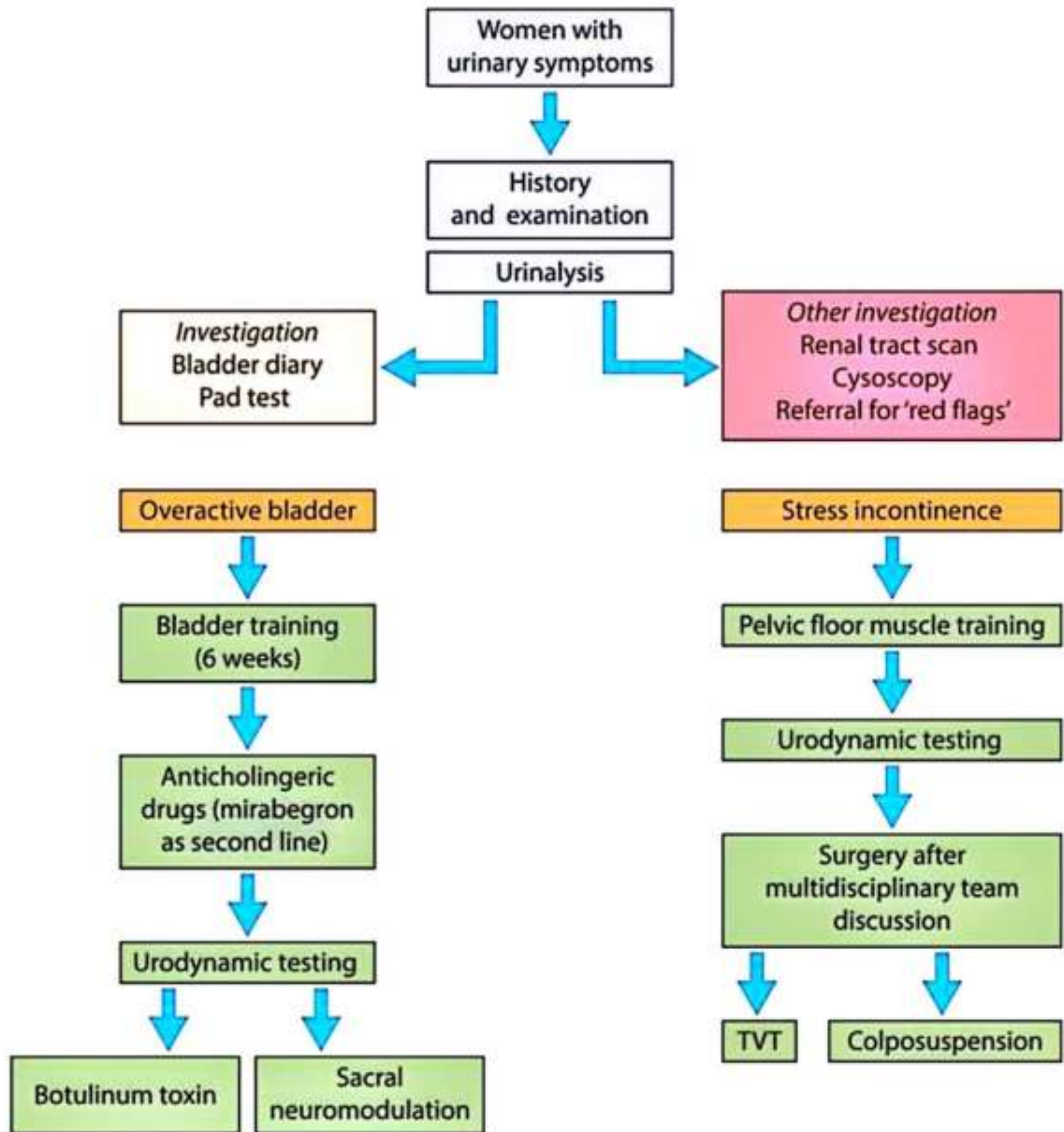
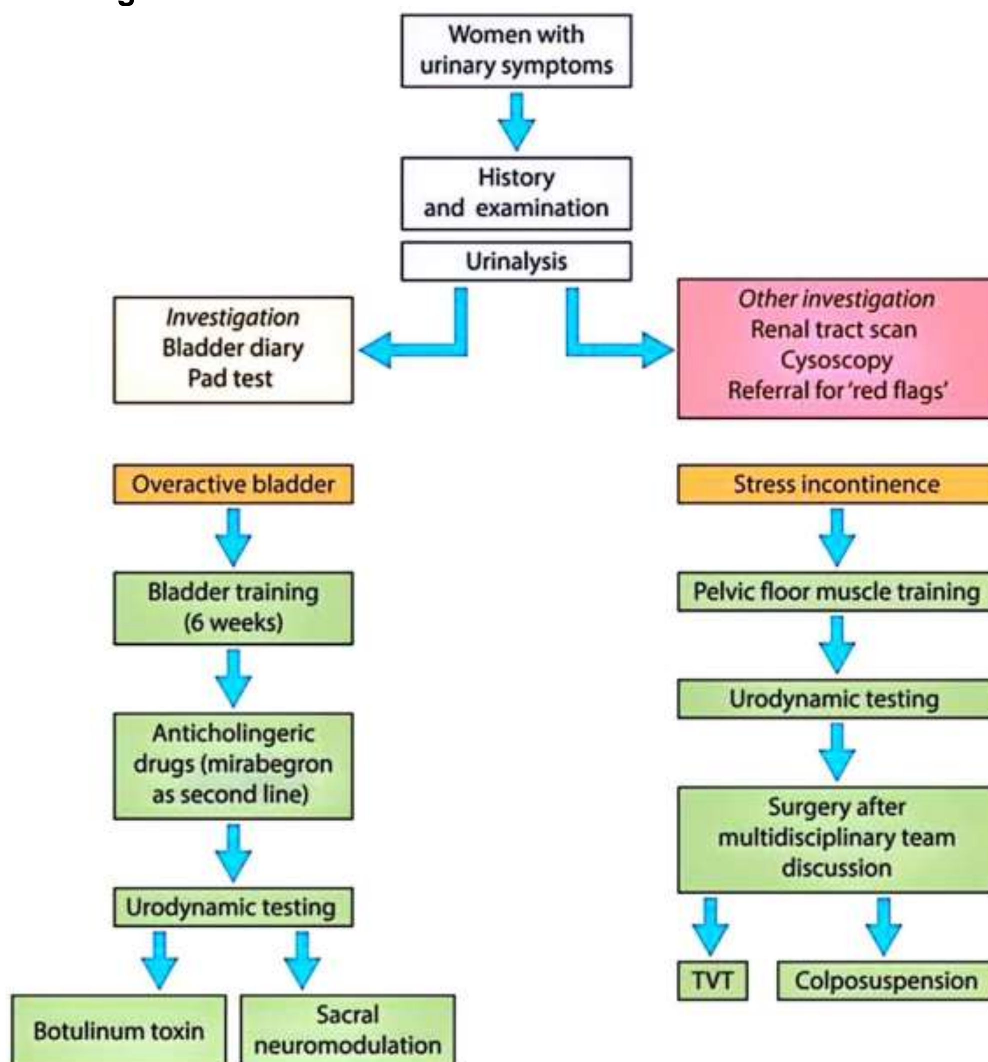


Q.29: A 65 years old female present to Gynae outpatient department experiencing frequent urge to urinate throughout the day and often leaks urine with the urge she finds the situation embarrassing and has started avoiding social outings?

a) What is the most likely diagnosis?
   Overactive bladder
b) Define detrusor over activity?
   It is occurrence of contractions in the detrusor muscles during the filling phase of micturition usually diagnosed on urodynamic investigation.
c) Enlist risk factors for detrusor over activity.
   - Child hood bed wetting
   - Obesity
   - Smoking
   - Previous hysterectomy
   - Previous continence surgery
d) Discuss management for overactive bladder?

Figure 103



Q.30: A 65 years old female has requested & surgical management for stress incontinence but also complaints of episodes of urgency and urge incontinence. Urodynamics are planned before planning, surgery.

Answer the questions related to urodynamics indication.

a) What is the role of urodynamic testing?
b) Women who fail to respond to anticholinergic medications?
c) Women with mixed symptoms
d) For women before surgery as considered.

Pressure catheter's placid

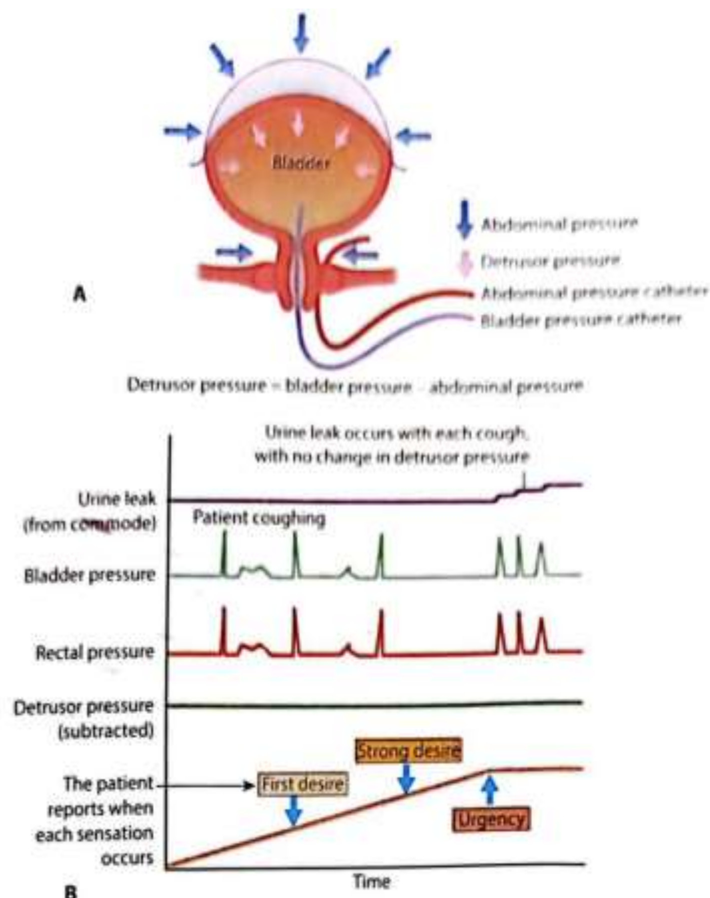
1) Bladder
2) Rectrum

First bladder filling sensation – 150 ml
Strong desire to void – 350 ml
Onset of urgency – 500 ml

<u>Urodynamic test advantages</u>

1) Evidence of urethral sphincter weakness.
2) Evidence of DO
3) To identify normal or abnormal voiding dysfunction.

Picture 10.4



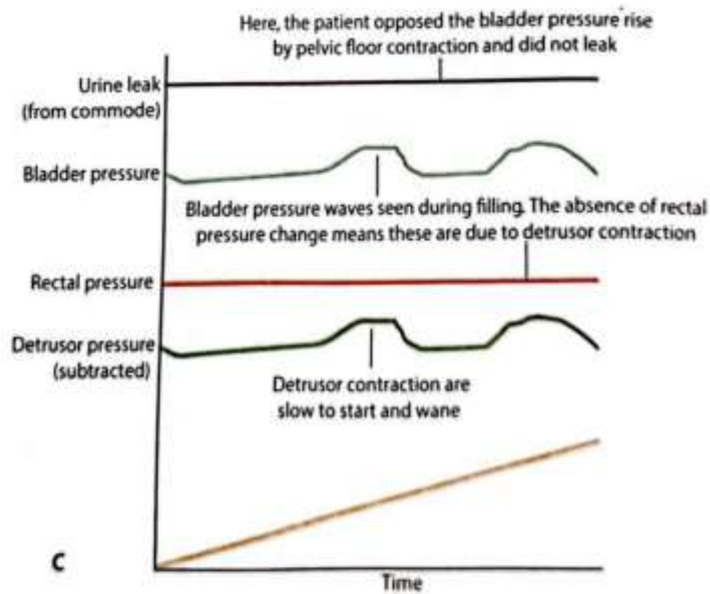


Figure: A urodynamic investigation (cytometry) records bladder pressure and abdominal (usually via a rectal pressure catheter), and calculates detrusor pressure by subtraction (A) During filling, the patient is asked to report the occurrence of first desire to void (usually about 150 ml), strong desire and urgency (at functional bladder capacity) (B). With urodynamic stress incontinence, leakage is seen with increases in abdominal pressure (e.g. coughing) with no change in detrusot pressure (B).With detrusor over activity, detrusor contractions are seen during the filling phase (C). These may or may not result in leakage, but normally will be associated with increased sensation.

Q.31: A 70 years old female presents of gynae OPD with complain of something out of vagina. She is keen to discuss conservative management of her prolapse.

a) Enlist the supports of pelvic organs?

Level 1 = Apical support – uterosacral ligament attach cervix to sacrum

Level 2 = Fascia that surrounds the vagina both anteriorly posteriorly lying between the vagina and bladder pubocortical fascia or rectovaginal fascia.

Level 3: Fascia of the posterior vagina. Which is attached at its caudal end to the perineal body.

b) What are conservative options of management?

1) Pelvic floor muscle exercises
2) Use of supportive pessaries vaginally

Advantages:

- Avoid surgical treatment
- No risk of anaesthesia
- Used in medically unfit patient
- Helpful in elderly patients.

Types of Pessaries

- Ring pessaries
- Shelf pessaries

Complications of Pessaries

- Vaginal ulceration
- Discomfort
- Fall out
- Not a permanent solution
- Discharge
- Incarcerated
- Rectovaginal or vesicovaginal fistula
- Problems with intercourse

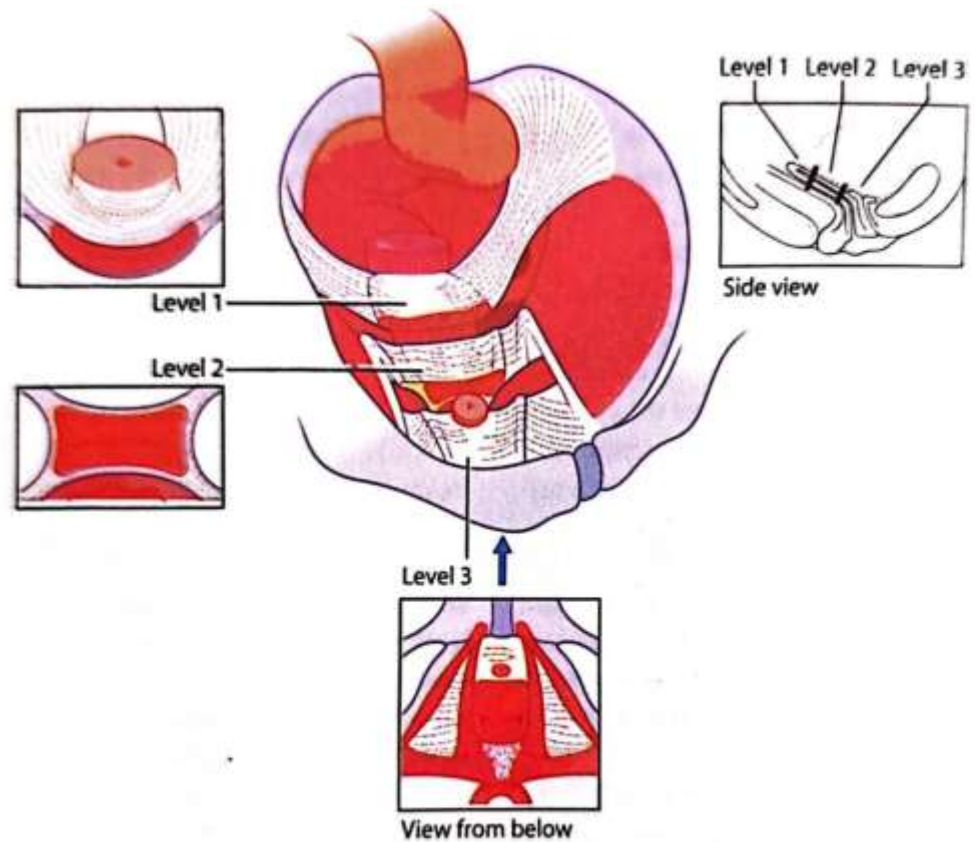


Figure: Fascial supports of the pelvic organs. Level 1 support is provided by the uterosacral ligaments, suspending the uterus and attached vaginal vault. Level 2 (midvagina) support is provided by the fascia lying between the vagina and the bladder or rectum that fuses laterally and runs to attach on the pelvic side wall. Level 3 support is provided by the perineal body, which has the posterior vaginal vascia fused to its upper surface.

Q.32: A 60 years female in gynae OPD after trying pelvic floor muscle physiotherapy for 6 months and failure of pessary treatment is here to discuss surgical management.

a) What are stages of prolapse?

- Stage 1 when prolapse does not reach the hymen
- Stage 2 where prolapse reaches the hymen
- Stage 3 when prolapse is mostly or wholly outside hymen where Procidentia: when uterus prolapse wholly outside this called procidentia.

b) Discuss surgical management of uterovaginal prolapse ?

- Common

Indication:

________if conservative measures fail if patient chooses surgery

Options:

- Vaginal hysterectomy
- Anterior valporrhaphy
- Posterior colpopereniorrhaphy
- Sacrohysteropoxy
- Sacrocalpopexy for vault prolapse
- Sacrospinous fixation

c) What are the principles of surgery for prolapse?

- Remove and reduce prolapse
- Restore the supports
- Replace organs in right position
- Restore perineal body

Q.33: A 30 years old female presents to accident and emergency at 6:00 am in the morning with complaint of severe abdominal pain, vomiting and feeling unwell. Her observations show blood pressure 110/60 with pulse 110/min, afebrile. On examination her abdomen is showing signs of acute abdomen. Her UND was 4 weeks ago with negative beta HCG?

a) What is the possible differential diagnosis?

1) Ovarian cyst torsion
2) Ectopic pregnancy
3) Endometriosis
4) Non-gynaecological – bowel obstruction
   - renal cause
   - aortic aneurysm

b) Enlist the investigations?

Group & screen
Full blood count + CRP
- Haemoglobin – c-reactive protein
- Platelets – white cell count

CUE complete urine examination
Anti-HCV
HbsAg

TV – USS
CT – Scan

c) What are possible complications of ovarian torsion?

- Infarction
- Gangrene
- May need oophorectomy

d) What is the management?

- Consent
- Laparoscopy for distortion of ovary
- Ovarian cystectomy if any cystic identified
- Debriefing the patient after surgery

Table 11.1 Types of benign ovarian cyst

Functional	Follicular Cyst Corpus luteal Cyst Theca luteal cyst
Inflammatory	Tubo ovarian abscess Endometrium
Germ Cell	Benign teratoma (dermoid cyst)
Epithelial	Serous cyst adenoma Mucinous Cyst adenoma Brenner tumour
Sex Cord Stromal	Fibroma Thecoma

Tumour Maker	Ovarian tumors type
Ca 125	Epithelial ovarian cancer (Serous) , borderline Ovarian tumors
Ca 19-9	Epithelial ovarian cancer (mucinous), borderline ovarian tumors
Inhibin	Granulosa cell tumors (type of sex cord stromal tumors)
β-hCG	Dysgerminoma, choricocarcinoma (Germ cell tumours)
AFP	Endodermal yolk sack, immature teratoma (germ cell tumours)

Q.34: A 28 year old female presents to the gynae outpatient department complain of severe lower abdominal pain which is worse during last days of periods. Pain is score 10 by the patient and affecting her quality of life and relationship

a) Enlist the possible differential diagnosis?
- Endometriosis
- Hemorrhagic ovarian cyst
- Ovarian cyst torsion
- Non-gynaecological – bowel obstruction
  - Renal colic

b) Symptoms of endometriosis according to lesion:

Table 11.3 symptoms of endometriosis in re

Site	Symptoms
Female reproductive tract	Dysmenorrhoea Lower abdominal and pelvic pain dyspareunia Rupture/ torsion endometrium Low back pain Infertility
Urinary tract	Cyclical hematuria/ dysuria Loin/flank pain (ureteric obstruction)

Gastrointestinal tract	Dysphasia (pain on defecation) Cyclical rectal bleeding obstruction
Surgical Scars/ umbilicus	Cyclical pain, swelling ad bleeding
Lung	Cyclical hemoptysis Haemopneumothorax
Ovarian function	Luteolysis caused by prostaglandin F2 Oocyte maturation defects Endocrinopathies Luteinized unruptured follicle syndrome Altered prolactin release Anovulation
Tubal function	Impaired fimbrial oocyte pick up altered tubal mobility
Tubal function	Impaired fimbrial oocyte pick up altered tubal mobility
Coital function	Deep dyspareunia reduced coital frequency
Sperm function	Antibodies causing inactivation Macrophage phagocytosis of spermatozoa
Early pregnancy failure	Prostaglandin induced immune reaction Luteal phase deficiency

c) Possible mechanism of infertility in endometriosis?

d) Discuss management options for endometriosis?

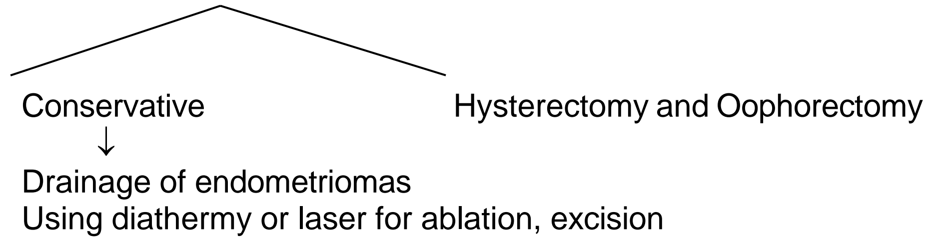
- Analgesics – NSAIDs – codeine – opiates
- Supervision of ovarian cycle by hormones
- Combined hormonal contraceptive
  - Improves dysmenorrhea
  - Improves dyspareunia
  - Provides cycle control
  - Contraceptive
- Usually tricycled

c) Progestogens
- Used with COCP is contraindication
- Depot medroxy progesterone acetate
- LNG-IUS

d) Gn-RH
  - Help in establishing the diagnosis
  - Use of more than 6 months is associated with osteoporosis
  - Usually used are slow release depot formulation

e) Other agents
  - Danazol
  - Gestrinone
  - Arm

3) Surgical options



Q.35 A 28 year old female presented to gynae outpatient department with complaint of lower abdominal pain. She has history of chronic pelvic pain due to pelvic inflammatory disease due to chlamydial infection.

a) Enlist possible causes of chronic pelvic pain?
1) Gynaecological - Endometriosis
   - Adenomyosis
   - Adhesions
   - Fibroid uterus

2) Nervous system - Visceral hyperalgesia
   - Neuropathie pain
3) Gastro intestinal system – Irritable bowl syndrome
   - Inflammatory bowel disease
   - Constipation
4) Urological - Bladder pain syndrome
   - Urinary tract calculi
5) Muscle skeletal - Joint disease
   - Spondyloli thesis
6) Nerve entrapment
a) Psychological and social issues
b) What are common investigations for chronic pelvic pain?
   - Genital tract swab
   - pelvic USS
   - MRI
   - Laparoscopy
c) How to manage chronic pelvic pain?
   - Involve the patient in the management of chronic pelvic pain
   - Health advice
     Diet
     Hydration
     Exercise
     Sexual health advice
   - Analgesia - opiates
     - NSAID
   - Hormonal treatment – to suppress function of ovaries
     - CoCP
     - LNG-IUS
     - GnRH analogue

   Surgical option - laparoscopy
   - removal of adenexal masses
   - endometriosis treatment
   - adhesiolysis

Referral to appropriate team for non-gynaecological causes
Pain management team or specialist pelvic pain clinic

Q.36 A 46 year old female P2 SVD's birth c/o presents to gynae outpatient department with C/o heavy irregular menstrual cycle with complain of lower abdominal pain. The bleeding is affecting her quality of life. She has family history of endometrial cancer in mother. How will you proceed?

1) Enlist causes of heavy menstrual bleeding?
   Endometrial, polyp
   Cervical polyp
   Coagulation disorders
   PID
   Thyroid disease
   Fibroid uterus

2) What investigations you will plan to reach a diagnosis?
   - Group and screen
   - Full blood count
   - Coagulation screen
   - Pelvic ultrasound
   - High vaginal endocervical swabs
   - Endometrial biopsy
3) Endometrial polyp
   - Endometrial polyps are focal endometrial outgrowths containing a variable amount of glands, stroma and blood vessels.

Presentation
- Abnormal uterine bleeding
- Post menopausal bleeding

Risk factors
- Obesity
- Late menopause
- Use of partial estrogen against Jumocifen
- Use of hormone replacement therapy

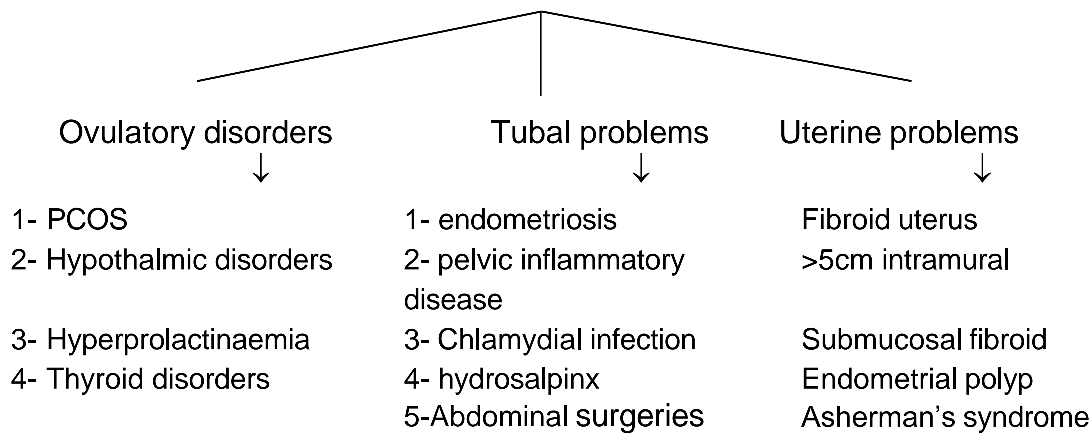
Diagnosis
- On ultrasound
- Outpatient hysteroscopy
- Saline infusion sonography

Treatment
- Hydroscopy and polypectomy under general anaesthesia + or local anaesthesia

Q.37 A 30 year old female P1 SVD CMI 30 presents to fertility clinic with secondary subfertility. Her history is significant for postpartum haemorrhage for which she had to undergo surgical management. On inquiry she disclose infrequent menstruation.

a) Define secondary subfertility?
A couple living together who has babies previously together (although either partner may have conceived in a different relationship).

b) Enumerate causes of female subfertility?



- Define Asherman syndrome?
  - Irreversible damage of the single layer thick basal endometrium does not allow regeneration of the endometrium. The cavity undergoes adhesions and fibrosis called Asherman syndrome

- Possible causes?
  - After infection of uterus – endometritis
  - Excessive curettage of uterine cavity during surgical management of miscarriage.

- Treatment option:
  - Aysteroscopy to manually break down adhesions in uterine cavity.
  - Treatment is difficult
  - The risk of further trauma to uterus can not be excluded.

Q.38: A 35 year old female P3 all SVDs, BMI 30 present to the gynae outpatient department with complaint of severe lower abdominal pain and heavy periods. Her ultrasound shows BCM submucosal fibroid pushing the endometrium. Her haemoglobin is 8g/dl with patient having shortness of breath tiredness and fatigue.

a) Define heavy menstrual bleeding?
A blood loss of more than 80 ml in one menstrual cycle. But exact measurement is not possible difficult so patient perception of their own blood loss is preferred.

b) How will you managed female presenting with fibroid uterus?

History:
When did she had lost menstrual period?
How is the amount of blood loss? Any passage of clots?
Any history of inter-menstrual bleeding?
Any history of subfertility?
Any bladder and bowl dysfunction?

Examination:
Look for signs of anaemia
Abdominal examination – for any palpable abdominal masses.

Bimanual examination:
To assess site, size, shape of uterus
Any tenderness
Any fullness in adnexae

Investigation:
TVUSG – Good to locate intramural and submucosal fibroid
Transabdominal scan
To look for large subserosal fibroids from fibroids abstructing the urinary tract structure.
Saline infusion sonography – to detect submucosal fibroid and endometrial polyp.

Hysteroscopy
To detect and treat submucosal fibroid and endometrial polyp.

Magnetic resonance imaging (MRI)
- For describing morphology and location of fibroid.
- As pre-requisite before uterine artery embolization
- To monitor response to treatment

Treatment

1. Medical

   Tranexamic acid
   NSAID's
   COCP
   LNGIUS
   GnRH agonist
   upepristal acetate

   Advantage
   Fertility sparing
   Avoid invasive procedure
   Avoid anaesthesia risk

   Disadvantages
   Not as effective - for submucosal fibroid
   - for enlarged uterine cavity

2. Surgical

a) Hysteroscopic myomectomy

<u>Advantage</u>
Minimally invasive day care
for submucous fibroid
avoid surgery
improves fertility

<u>Disadvantage</u>
For only sub-mucous fibroid

b) Myomectomy

<u>Advantage</u>
Fertility sparing
Treats heavy menstrual bleeding
Treats pressure symptoms

<u>Disadvantage</u>
Bleeding
1% risk of unplanned hysterectomy
Postoperative adhesions
May interfere with subfertility

c) Hysterectomy

<u>Advantage</u>
For women with no fertility desire can be done laparoscopically abdominally, vaginally
Guarantee amenorrhea

<u>Disadvantage</u>
Risk of anaesthesia
Injury

Bleeding
Fertility is lost

d) Radiological
- Uterine artery embolization

  Advantage:

  Minimally invasive
  Avoids general anaesthesia
  Avoids surgery
  Patient satisfaction equal to myomectomy

  Disadvantage

  Can not be offered to every patient may need further treatments

- MRI guided transcutaneous focused ultrasound
- Transcervical intrauterine ultrasound guided radiofrequency ablation.

Q.39: A 48 year old all SVD's BMI 30 presents to gynae outpatient department with complaint of heavy menstrual bleeding and severe – secondary dysmenorrhea. Her ultrasound shows uterus 14x8x7cm with findings suggestive of adenomyosis.

a) Define adenomyosis?
Adenomyosis is a condition in which endometrial glands and stroma are found deep with in the myometrium.

b) Enlist appropriate investigations?
Group & screen
Full blood count
Coagulation screen
AbsAg
Anti HCV
Complete urine examination
USS pelvis
MRI pelvis

c) What is the most appropriate treatment option?

- Aysherectomy with conservation of ovaries it helps improve the symptoms of pain and bleeding. Conservation of ovaries keeps the hormonal cycle intact but important to discuss the pros and comes of oophorectomy with patient before hand.

Q.40: A 67 year old female presents to vulval clinic with complaint of itching, hypopigmentation and cracks in vulval area, Ster symptoms have worsened over last six months. There are no ulcers, bleeding episodes or vaginal discharge. .

a) What is the most likely diagnosis?
Lichen sclerosis

b) Enlist the differential diagnosis?
Lichen plannus
Lichen simplex
Vulval atrophy
Vulval intro epithelial neoplasia.

c) Discuss the management of lichen sclerosis?
Diff:
It is believed to be an autoimmune condition which is thought to be a destructive inflammatory skin condition that mainly affective anogenital area.

Incidence:
Affects 1 in 100 women
Co-exists with pernicious anemia
Thyroid diseases

Pathophysiology

- Inflammation is subdermal layers of skin resulting in hylanization of skin.
- While pertinent appearance of skin and loss of vulval anatomy.
- Seen else where in body in 15% patients.

Confirmation of diagnosis:

- On biopsy

Treatment

- Good skin care:
- Strong steroid ointment
- Colbetasal propionate
- Pea size amount – daily 1 month
  - alternate day 1month
  - Twice a week third month

Association with vulval cancer:

Low risk around 3-5% of development of cancer 4-13%. In women with lichen sector seen.

Q.41: A 25 year old female presents to urgent gynae clinic with complaint of severe lower abdominal and vulval pain. She has a swelling in vulva area which has gradually increased in size and now become painful and patient is unable to walk and cyst. On inquiry, she has a similar episode two year back which settled with antibiotics?

a) What is the most likely diagnosis?
Vulval Bartholin cyst

b) What is differential diagnosis for vulval cysts?
Bartholin's cyst
Skene gland cyst
Mucous inclusion cysts

c) What is pathophysiology of Bartholin's cyst?
Due to blockade of duct draining the bartholin gland. Due to unability o drain fluid gets accumulated eventually ferming the cyst.

d) What is Bartholin's Abscess?
An infection of the bartholin cyst making it actively tender due to pus and infection and uncomfortable to patien is called barholin abscess.

e) Discuss the treatment options?

1) Incision and drainage?
Draining the cyst by incising to relieve the symptoms and promote healing.
2) Malsupialization of cyst
Elective procedure
Under general or spinal anaesthetic internal aspect of cyst is sutured to outside of the cyst to create a window hat cyst does not reform.
3) Outpatient drainage and insertion of wood's catheter.

Q.42: A 30 years old female Po, BMI 36 present to gynae out patient department due to complaint of dyspareunia and dysmenorrhea. The symptoms are so severe affecting her relationship.

a) Define dyspareunia?

Pain during or after sexual intercourse which can be classified as superficial affecting vagina, clitorisoer labia or deep with pain experienced in the pelvis.

b) Enlist possible causes of dyspareunia?

- Female genital mutilation
- Suspected pelvic inflammatory disease
- Endometriosis
- Perimenopausal status
- Post menopausal status
- Depression or anxiety
- History of sexual assault

c) Discuss the management options?

History

- Explore the nature and onset of pain
- Relationship of pain to inter course
- Enquire about any signs and symptoms of chronic pelvic pain.
- Inquire about post reproductive and medical history
- Psychosexual history after proper sign posting.

Examination

- Abdominal and pelvic examination look for
- Genital tract lesions e.g. skin disorder
- Scarring
- Any anatomical abnormalities e.g. vaginal septum
- Vaginismus

  Involuntary contraction of perineal muscles during vaginal examination.
- Any areas of tenderness within lower or upper genital tract
- Any evidence of pelvic masses (fixity of organs due to endometriosis)

Investigations

- Vaginal swabs
- Biopsy of any genital tract lesion if found
- Trans-vaginal ultrasound
- Laparoscopy

Treatment
- Counselling and exercise
- Involve partner in all modalities
- Psycosexual therapy referred
- Relaxation with deep breathing genital vuival touching
- Supervised pelvic floor exercises
- Using vaginal trainers

Q.43: A 26 years old female has recently moved in UK from Somalia. She is 26 weeks into her first pregnancy and has booked with the health care services. She disclosed to her midwife about her cutting as a child.

a) What is the most likely diagnosis?
Female genital mutation

b) Enlist types of female genital mutilation?
- Type 1 clito voidectomy
- Excision of propuce (clitoral hood) with or without removal of clitoris.
- Type 2 excision of clitoris and partial or total removal of the labia minora.
- Type 3 excision of part or all of external genitalia and stitching 1 narrowing of vagina infundibulation.
- Types piercing the clitoris, cauterization, cutting the vagina inserting corrosive substances

c) Discuss de-infundibulation?

- Managed in specialist centers
- Adequate analgesia
- Incision along the vulval incision scar and it is important to identify urethra before surgery to avoid damage
- Prior urinary tract infection screen is very important
- Use of appropriate antibiotic therapy is recommended
- Suture used should be fine and absorbable
- It is imperative to involve specialist services and support groups to in care of affected women.

Q.44: A 60 years old female BMI 35 presents in gynae out patient department with history of bloating, abdominal distension, flatulence and weight loss. He family history as significant for ovarian cancer. Investigations reveal complex adenexal mass in right ovary with solid component and vascularity.

a) What is the differential diagnosis?
Epithelial ovarian cancer
Sex cord stromal tumor
Germ cell tumor
Kruken tumor

b) Enlist risk factors for ovarian cancer is decreased by:

Multiparity
COCP
Tubal ligation
Salpingectomy
Hysterectomy

Risk of ovarian cancer is increased by:

Enlist risk factors for ovarian cancer is decreased by:

Nulliparity
Intrauterine device
Endometriosis
Cigarette smoking
Obesity

c) Enlist investigations for diagnosis?

- TV-USS - to assess uterine morphology
  - status of ovaries
  - any details of any pelvic masses if noted
- Size
  Consistency
  Presence of solid component
  Ascites
  Extraovarian disease
  Thickness of peritoneal, omental deposits

- Ca125
  Is revised in 80% of epithelial ovarian tumors
- CT thorax, abdomen pelvis
  To diagnose any extra-pelvic disease for staging

- MRI
  To define tissue planes and operative ability
- Chest X-ray

- ECG
- Full blood count
- Liver function tests

Staging

Table 14.4

d) Treatment

Surgery: Staging laparotomy
Peritoneal washings
Total abdominal hysterectomy and BSO
omentectomy by gynaecological oncologist

Aim of surgery: complete or optional cytoreduction where <1cm of residual macroscopic disease is left behind.

Tumor deposits on bowel spleen, peritoneal surface and diaphragm are usually amenable to surgical correction, while deposits on porta hepatis and bowel mesentry are not.

Supra radical ovarian cancer surgery – for fit women and has increased risk of per-operative morbidity and mortality and woman must be carefully counseled.

Neoadjuvant chemotherapy followed by interval debulking surgery.

Chemotherapy

1) Platinum based – paditaxel
   3 week apart for six cycles
2) Carboplatin – less renal toxicity and nausea
3) Paditaxal
4) Bevacizumab

CT – after completion of chemotherapy to assess response to treatment.

Follow up

- Clinical examination
- CA D5

Recurrence

- Usually treatment intention with recurrence is palliation
- If duration of remission is more than six months carboplatin chemotherapy may be considered.

Prognostic factors

- Stage of disease
- Volume of residual disease post surgery
- Histological type and grade of tumor
- Age at presentation

Survival Rate

- Fig 1: 80 – 90%
- Fig 2: 65 – 70%
- Fig 3: 30 – 50%
- Fig 4: 15%

Stage	Figo definition
1	Tumor confined to ovaries
1a	Limited to one ovary, no external tumor, capsule intact, no ascites
1b	Limited to both ovaries, no external tumor, capsule intact, no ascites
1c	Either 1a or 1b, but tumor on surface of ovary or with capsule ruptured or with ascites positive for tumor cells
2	Tumour confined to pelvis
2a	Extension and/ or metastases to uterus or tubes
2b	Extension to other pelvic organs
2c	As 2a or 2b, but tumour on surface of ovary or with capsule ruptured or with ascites positive for tumour cells
3	Tumour confined to abdominal peritoneum or positive retroperitoneal or inguinal lymph nodes
3a	Tumour grossly limited to pelvis with negative nodes, but histologically confirmed microscopic peritoneal implants
3b	Abdominal implants <2 cm in diameter
3c	Abdominal implants >2 cm diameter or positive retroperitoneal or inguinal lymph nodes
4	Distant metastases. Must have positive cytology on pleural effusion, liver parenchyma

Q.45: A 16 years old girl presents to gynae out patient department with complaint of lower abdominal pain, and feeling of mass in lower abdomen gradually increasing in size. Her ultrasound pelvis shows normal sized uterus with right sided ovarian mass of 10x10cm with solid component and raised alphafeto protein.

a) What is the most likely cause?
   Endodermal sinus yolk sac tumor.

b) What tumor markers are requested for female less than 40 years with adnexal cyst?

   CA 125
   Alpha fetoprotein
   Lactate dehydrogenase
   Beta human chorionic gonadotrophin

c) What are the treatment options?

   Aim:
   Fertility sparing treatment may be preferred in women of reproductive age.

   Exploratory laparotomy is performed aiming to remove the cyst in ovary and incision of contralateral ovary and abdominal cavity. Peritoneal biopsies and sampling of any enlarged pelvic or para-aortic lymphnodes is performed. Eozen section intraoperatively may be needed to assess the status of lymph nodes.

   Post-operative chemotherapy depends on stage od disease.
   Usually Belomycin, etoposide and cisplatin combination is used for a course of three to four treatments, 3 weeks apart.

   It conserves fertility.

   Cure rate of >90%

   Stage 1 dysgerminoma low grade teratomas only need surgery, no need for chemotherapy.

Q.46: A 65 years old female with BMI 40 presents to gynae out patient department with complaint of inter-menstrual bleeding. She has type 2 diabetes. She is nulliparous, on hormone replacement therapy and smoker. Her smears have always been normal.

a) What is differential diagnosis?
   Endodermal cancer
   Cervical cancer
   Vaginal cancer
   Vulval cancer

b) Enlist the risk factors and protective factors for endometrial cancer?
   Table 15.1

c) How you will investigate post-menopausal bleeding
   Physical examination
   Abdominal examination
   Speculum examination
   Bimanual examination
   To locate any abdominal masses, ascites, size, mobility of uterus, any tenderness.

   <u>TRUSS</u>
   For uterine morphology
   Endometrial thickness
   Adnexa

   Hysteroscopy
   Endometrial biopsy

   <u>Treatment</u>
   According to result of histopathology for endometrial cancer

   Total abdominal hysterectomy and bilateral salpingo-ophorectomy abdominally or laparoscopically

Table 15.2 international federation of Gynecology and obstetrics (FIGO) staging of carcinoma of the uterus

I	**Confined to uterine body**
IA	Less than 50% invasion
IB	More than 50% invasion
II	Tumour invading cervix
III	Local and or regional spread of tumour
IIIA	Invades serosa of uterus

IIIB	Invades vagina and / or parametrium
IIIC	Metastases to pelvic and / or para-aortic nodes
IV	Tumour invades bladder ±bowel ± distant metastases

Staging of endometrial cancer	Adjuvant treatment Local radiotherapy external beam radiotherapy chemotherapy

Modified radical hysterectomy is done if MRI suggests involvement of cervix
It involves pelvic and para-aortic dissection along with removal of vaginal cuff, paracervical and parametrial tissue.

B – year survival
Table 15.3 Five year survival form women with endometrial cancer

Stage	5 year survival (%)
I	88
II	75
III	55
IV	16

Q.47: A 55 years old female presents to gynae out-patient department with complaint of urinary retention and offensive vaginal discharge for 6 months. She has history of smoking and worked as commercial sex worker in the past. Examination shows abnormal growth on the cervix.

a) What is the most likely diagnosis?
Cervical cancer

b) Mention stages and prognosis of cervical cancer?

Table 16.1: Staging and prognosis of cervical cancer

Stage	Extent of disease	5- year survival rate (%)
I	Tumour confined to the cervix IA: Microscopic disease Maximum horizontal dimension is 7 mm and depth of invasion is 5mm IA1: Maximum horizontal dimension is 7 mm and depth of invasion is 3mm IA2: Maximum horizontal dimension is 7mm and depth of invasion between 3 and 5 mm	83

	IB: clinical lesions confined to the cervix or preclinical lesions greater than 1A IB1: clinical lesions no greater than 4 cm in size IB2: Clinical lesions greater than 4 cm in size	
II	Tumour extends beyond the cervix and involves the vagina (but not the lower third) and / or the parametrium (but not reaching the pelvic side wall . IIIA: tumour involves he Vagina IIIB: tumour infiltrates the parametrium	65
III	Tumour involves the lower third of the vagina and / or extends to the pelvic side wall IIIA: Tumour involves the lower third of the vagina IIIB: Tumour extends to the pelvic wall and / or hydronephrosis or nonfunctioning kidney due to ureteric obstruction and caused by tumour	36
IV	IVA: Tumour involves the mucosa of the bladder or rectum and / or extends beyond the true pelvis IVB: Spread to distant organs	10

(According to the international Federation of Gynecology and obstetrics (FGO) staging system)

c) What treatment options of cancer cervix
   Depends on stage of disease requirement of future fertility
   Patients performance status.

d) MDT discussion
   Surgeon
   Radiotherapist
   Radiologist
   Pathologist
   Nurses

   Pre-clinical lesions IA
      Loop excision
      Knife cone biopsy
   Clinically invasive cervical carcinoma stage IB-IV

   Stage IB fertility preserving treatment

   Stage IB1 radical hysterectomy and bilateral pelvic node

   dissection (Wertheim's hysterectomy)

   Radical trachelectomy

   Removal of cervix & upper part of vagina

   Bilateral pelvic node dissection

Stage IB → pelvic radiotherapy for anesthetically valid too over weight for radical surgery has similar success rate

Stage II-VI - Radiotherapy with or without chemotherapy.

Complications of surgery

- Incomplete excision of cancer
- Hemorrhage
- Lymphoedema
- Sexual dysfunction
- Neuronal damage

Radiotherapy

- Teletherapy
- Bradytherapy

Complication

- Lethargy
- Bowel and bladder urgency
- Skin erythema

Q.48: A 70 years old female presented in gynae out-patient department with itching and vulval sauciness. On examination 1x2 cm ulcer noted on left fabia majora with mild bleeding. Biopsy was taken came back as squamous cell carcinoma vulva.

a) Enlist the staging and prognosis of vulval cancer?

- **Table 16.4:** Staging and prognosis of vulval cancer

Stage	Extent of disease	5- year survival rate (%)
Stage I	Tumour confined to vulva	90%
IA	≤2cm in size , stromal invasion ≤1 mm, no nodes	
IB	>2cm in size or stromal invasion > 1 mm, no nodes	
Stage II	Tumour extending to lower 1/3 urethra or vagina, or anus	50%
Stage III	Positive inguinofemoral lymph nodes	30%
IIIAI	1 lymph node metastasis ≤5mm	
IIIA2	1-2 lymph node metastases < 5	
IIIB1	≥ lymph node metastases ≥ 5mm	
IIIB2	≥ 3 lymph node metastases < 5mm	
IIIC	Extra capsular spread	
Stage IV	Tumour invading regional or distant sites	15%

IVA1	Upper urethra / vaginal Mucosa, fixed to pelvic bone	
IVA2	Fixed or ulcerated inguinofemoral lymph nodes	
IVB	Distant metastases including pelvic lymph nodes.	

•

b) What is treatment of vulval cancer?
Radical surgical excision – Aim is to have clear margins of 10mm.
If margins of excision less than 5 mm
- unacceptable high rate of recurrence
- need for further excision
- radiotherapy

If large or midline tumors making it difficult to do surgical clearance
- neoadjuvant radiotherapy
- combination with chemotherapy

Closure:
- Primary closure is preferred
- rural reconstruction using flaps of skin

c) Enlist the complications of lymphadenectomy with rural surgery?

- Wound healing problem
- Infection
- Venous thromboembolism
- Prolonged hospital stay
- Lymphocyst
- Chronic lymphoedema

Q.49: You are registrar covering gynae theatre today. Final year medical student comes to gynae theater for first time. Kindly answer their questions.

a) What are routes for hysterectomy?
Total abdominal hysterectomy
Vaginal hysterectomy
Total laparoscopic hysterectomy
Laparoscopic assisted vaginal hysterectomy
Robotic hysterectomy
b) What are three main pedicles for hysterectomy?
The infundibulopelvic ligament – it contains ovarian vessels.

Complications of hysterectomy

- Haemorrhage (intra or immediate postoperative)
- Deep vein thrombosis (pelvic surgery)
- New bladder symptoms (both overactive bladder and stress incontinence)
- Higher incidence of vaginal prolapse after hysterectomy for any cause.
- Bladder injury (uncommon)
- Ureteric injury (rare)
- Rectal injury (rare)
- Vesicovaginal or rectovaginal fistula (consequence of injury) (very rare)
- Early onset of menopausal symptoms (if ovaries left *in situ*)
- Immediate onset of menopausal symptoms (if ovaries removed in a premenopausal woman)
- Thromboembolism

Q.50: Wrote a note on laparoscopy?

Laparoscopy allows visualization of the peritoneal cavity. This involves insertion of a needle called a Veress needle into a suitable puncture point in the umbilicus. This allows insufflation of the peritoneal cavity with carbon dioxide so that a larger instrument can be inserted. The majority of instruments used for diagnostic laparoscopy are 5mm in diameter, and 10 mm instruments are used for operative laparoscopy. More recently, a 2 mm laparoscope has become available.

Indications

- Suspected ectopic pregnancy
- Ovarian cyst accident and acute pelvic pain
- Undiagnosed pelvic pain
- Tubal patency testing
- Sterilization

Operative laparoscopy can be used to perform ovarian cystectomy or oophorectomy and to treat endometriosis with cautery or laser. As discussed above, more extensive laparoscopic work is now performed for hysterectomy, lymph node biopsy, omentectomy and myomectomy.

Complications

Complications are uncommon, but include damage to any of the intra-abdominal structures, such as bowel and major blood vessels. The bladder is always emptied prior to the procedure to avoid bladder injury, incisional hernia has been reported.