Examination of the Pregnant Abdomen

Medical students often find the examination of the pregnant abdomen daunting. This document provides a framework for you to develop a comprehensive understanding of the pregnant abdomen examination at undergraduate level.

To assist your learning this is presented as a step-by-step guide, together with questions to test your understanding.

Introducing Yourself and Gaining Consent

Appropriate Introduction (Full Name and Role)

“Hello my name is Alex Middle, I am a final year medical student at Prince Charles Hospital.”

Confirm Patient Identity

“Can I clarify your name and date of birth please?”

Gaining Verbal Consent

“Are you comfortable with me feeling your tummy to see how baby is?”

Expose the Patient and Wash Hands

“Could you lie down on the couch and lift up your top so I can see your tummy while I wash my hands?”

Remember to appropriately expose the patient from the costal margin to the pubis symphysis, ensure they are lying comfortably and as flat as they can manage.

Ask

Are you comfortable?

Are you experiencing any pain or tenderness?

How many weeks pregnant are you?

Inspection

Comment on the presence or absence of the following key observations:

1. Distended abdomen

“The abdomen is distended and consistent with pregnancy.”

2. Fetal movements

Present from 24 weeks.

3. Scars

Suprapubic Scar: Previous caesarean section, laparotomy for ectopic pregnancy or ovarian mass removal. Sub-umbilical scar suggests previous laparoscopic procedure.
4. Umbilicus
Umbilicus maybe flat within the surface or everted due to increase abdominal pressure. Inversion of the umbilicus is normal.

5. Cutaneous Signs
- **Linea nigra**: a line of dark pigmentation stretching from below the xiphi sternum through the umbilicus to the supra pubic area.
- **Striae gravidarum**: Purplish striae of no clinical significance.
- **Striae albicans**: Silvery-white striae indicting previous parity.
Distended superficial veins: indicating alternative paths of venous drainage due to pressure on the inferior vena cava by gravid uterus.

**Palpation: Measuring the Symphysio-fundal Height (SFH)**

![Image of measuring the Symphysio-fundal Height (SFH)](image)

The uterine size can be measured and expressed as the **SFH**, it represents the distance between the fundus of the uterus to the pubis symphysis.

**Locating the fundus**: Palpate the highest point of the uterus, the fundus, by using the ulnar border of the left hand and moving it downwards from below the xiphi sternum until the fundus is located.

**Locating the pubis symphysis**: Palpate downwards in the midline starting from a few centimeters above the pubic hair margin.

**Measurement**: The SFH can be measured by using a tape measured in centimeters face downwards.

The uterus is palpable from week 12 of gestation and reaches the umbilicus by week 20, at which time the SFH increases by 1cm per week. The maximum height of the uterus occurs at week 36 where it lies under the ribs. After week 36 the uterus descends due to the decrease in amniotic fluid volume and the descent of the fetal head.

A higher than expected SFH value can be due to **macrosomia**, multiple pregnancy and **polyhydramnios**.

A lower than expected SFH value can be due to **intrauterine growth retardation** or **oligohydramnios**.
Fetal Lie
Lie of the fetus describes the relationship of the longitudinal axis of the fetus to the longitudinal axis of the uterus.

Facing the mother, place one hand on each side of the uterus and apply gentle pressure. One should be able to feel the resistance of the firm fetal back and on the opposite side it may be possible to feel the fetal limbs.

Fetal lie can be described as **longitudinal**, **transverse** or **oblique**.

- **Longitudinal**: the head and buttocks are palpable at each end of the uterus.
- **Transverse**: the fetus is lying transverse across the uterus and the pelvis will be empty.
- **Oblique**: the head or buttocks is palpable in one of the iliac fossae.

Presentation
Presentation is the part of the fetus that overlies the pelvic brim, which occupies the lower segment of the pelvis. It is of importance especially after 37 weeks gestation when the majority of women go into labour.

It can be determined by placing both hands on either side of the lower pole of the uterus, just above the pubis symphysis, whilst continuing to face the mother. By applying firm pressure towards the midline one can determine the presenting part.

A hard round presenting part suggests a **cephalic presentation**, while a broader soft object suggests a **breech presentation**.

Palpatiing the Anterior Shoulder
Once the fetal lie is determined the **anterior shoulder** should be palpated as the fetal heart sounds are best heard over this area. A shallow groove palpable between the presenting part and the rest of the fetus helps to identify the anterior shoulder.

Engagement of the Head
When the fetus is in a **cephalic presentation** it is usual to report the fetal engagement. The term **engagement** is used when the widest diameter of the fetal head has descended into the pelvis; the descent is described as ‘fifths palpable’. This is a rough approximation as to how many finger breadths are necessary to cover the head above the pelvic brim.

If only 2/5ths of the head is palpable abdominally over half of the fetal head has entered the pelvis and therefore the head is engaged.

Auscultation
The Pinard stethoscope can be placed over the anterior shoulder and fetal heart sounds can be heard, at 24 weeks gestation. A **Doppler Ultrasound** can be used after 12 weeks gestation. The rate can be determined by auscultation over 1 minute, and should be 120-140 beats per minute. If there are abnormalities **Cardiotocography** (CTG) should be requested.

At this point you have finished your main examination, thank the patient, elicit their concerns, and allow them to re-dress in privacy.
Investigations

Maternal Blood Pressure
The maternal blood pressure should be measured at the end each examination. A diastolic blood pressure >90mmHg should be investigated further, with particular attention to Pre-Eclampsia.

Mid Stream Urine
The maternal mid stream urine should be tested for glucosuria (Gestational Diabetes) and proteinurea (Pre-Eclampsia)

Anaemia
Inspect for signs of anaemia such as pallor.

Self-Assessment Questions

Question 1
Uterine size is assessed clinically in a woman who is large for dates.
A. What are the causes of large for dates?
B. Name three investigations you would perform.
C. What is this clinical measurement called?
D. What is its relevance?

Question 2
Maternal causes of intrauterine growth retardation include:
A. Pre-eclampsia
B. Preterm Labour
C. Oligohydramnios
D. Recurrent miscarriage
E. Postpartum hemorrhage

Question 3
Causes of proteinurea in pregnancy include:
A. Acute pyelonephritis
B. Abruptio placenta without pre-eclampsia
C. Chronic glomerulonephritis
D. Diabetic nephropathy
E. Uncomplicated essential hypertension
Question 4
Breech presentation:
A. More common in mulitpara
B. Associated with an anthropoid pelvis
C. Associated with a bitrochanteric diameter of 10cm
D. More common in prematurity

Question 5
Risk factors for pre-eclampsia include:
A. Obesity
B. Previous pre-eclampsia
C. Underweight and short
D. Age between 25-35 years
E. Chronic renal disease

Answers

Question 1
A. Maternal obesity, adnexal pathology, uterine fibroids, multiple pregnancy, fetal abnormality, macrosomic fetus and polyhydramnios.
B. Ultrasounds scan, red cell tolerance test, and antibodies to check fro isoimmunisation.
C. Symphysiofundal height.
D. One centimeter corresponds to 1 week of gestation.

Question 2
ABCDE
Maternal cause of intrauterine growth retardation include smoking and alcohol, infections, pre-eclampsia, placenta abruption, diabetes mellitus and renal disease. Fetal causes include chromosomal abnormalities, anencephaly and multiple pregnancy.

Question 3
ABCDE
Causes of proteinurea in pregnancy include acute pyelonephritis, UTI, pre-eclampsia, abruptio placenta, chronic glomerulonephritis, diabetic neuropathy, and hypertension.

Question 4
ABCD
A breech presentation is associated with bony pelvic abnormalities, uterine abnormality, multi-parity, pre-maturity and multiple pregnancy and placenta praevias.
Question 5

BCE

Obesity is a risk factor for hypertension only, women who have had hypertension on the combined oral contraceptive pill are at risk as well as those with autoimmune disorders.

References and Resources

Oxford Textbook of Obstetrics and Gynaecology

http://www.clinicalexam.com/pda/o_obs_antenatal_history_exam.htm
A Online Guide to Obstetrics and Gynaecology History and Examination Technique

http://www.martindalecenter.com/MedicalClinical_Exams.html
A Online Guide to Obstetrics and Gynaecology Examination Technique

Important Note
These notes are presented in good faith and every effort has been taken to ensure their accuracy. Nevertheless, medical practice changes over time and it is always important to check the information with your clinical teachers and with other reliable sources. Disclaimer: no responsibility can be taken by either the author or publisher for any loss, damage or injury occasioned to any person acting or refraining from action as a result of this information.